

# FLIGHT

The  
AIRCRAFT ENGINEER  
AND AIRSHIPS

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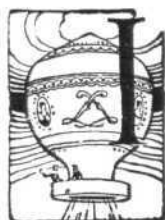
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## EDITORIAL COMMENT



### On the Trail of Hinkler

BELIEVE that the worst possible harm to flying would be done by scheduling an air service to run regularly over a long-distance route such as England to India to the high-speed time-table followed by some of those who have made the splendid—but isolated—flights on the route." So said Sir Eric Geddes, Chairman of Imperial Airways, Ltd., in a paper read at Cambridge last February. But it seems that Imperial Airways sees nothing very harmful in following the high-speed time-table of a pioneer three years after the splendid but isolated flight has been accomplished. Three years ago Bert Hinkler flew from England to Australia in 15½ days. This month Imperial Airways is making a couple of experimental flights which are to get mails to Australia in 15 days. It almost seems as if the splendid isolated flights of the pioneers do produce some effect, though it may take three years for the effect to be produced. Perhaps in another three years we may find Imperial Airways setting out to equal or beat the time of Kingsford Smith. In a further period of time, though we should not care to make a guess at the exact length of it, we may find our mails to India and Capetown rivalling the time table of C. D. Barnard and the Duchess of Bedford. And a totally new standard has now been set up by Glen Kidston in his Lockheed "Vega." If our air mail service can keep no more than three years behind the record flights, we see a great future before it.

These flights by Imperial Airways are being carried out with types of aircraft designed for the conveyance of passengers. So far as Delhi there will be nothing novel about them; they will be merely the ordinary weekly service. From Delhi to Darwin is the new and experimental section, and it will be carried through by "Hercules" machines. As standard, and by no means new, types of passenger aircraft can now accomplish what was thought a remarkable performance three years ago, we could certainly get a really fast mail service if properly designed mail-planes were used and were backed up by all the experience and skill at organisation which has been acquired by Imperial Airways. Even without night

## DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

1931	
April 11.	British Schools' Aviation Day, Hedon Aerodrome, Hull.
April 11.	W.R.A.F. Reunion Dinner, Florence Restaurant.
April 11-19.	National Aircraft Show, Detroit, U.S.A.
April 12.	Flying Meeting, Yorks. Ae.C., Sherburn-in-Elmet.
April 13.	"The Present Position in Aeronautics." Howard Lecture by Dr. N. A. V. Piercy, before R.Soc. of Arts.
April 16.	"Aircraft Noise." Lecture, by Dr. A. H. Davis, before R.Ae.S.
April 18.	Air Rally, Aston Clinton, Bucks.
April 18.	No. 55 Sqdn. R.A.F. Reunion Dinner, Park Lane Hotel.
April 20.	"The Present Position in Aeronautics." Howard Lecture, by Dr. N. A. V. Piercy, before R. Soc. of Arts.
April 22.	Air League Annual Dinner, at Dorchester House, Park Lane.
April 25.	Sailplane Club's Dance, Suffolk Galleries.
April 27.	Closing date of British Empire Trade Exhibition, Buenos Aires.
April 27.	"The Present Position in Aeronautics." Howard Lecture, by Dr. N. A. V. Piercy, before R. Soc. of Arts.
April 30.	"Aerodynamics of Sails." Lecture, by Dr. M. Curry, before R.Ae.S.
May 3.	Flying Meeting. Southern Ae.C., Shoreham.
May 9.	Flying Meeting, Bridgend, Glam.
May 14.	"Metal-Clad Airship." Lecture, by C. Fritsche, before R.Ae.S.
May 15-31.	Stockholm Aero Show.
May 23.	Start of Whitsun Continental Cruise, Heston.
May 25-26.	Northamptonshire Ae.C. Flying Meeting at Sywell.
May 30.	London-Newcastle Air Race, for "Newcastle Evening World" Trophy.
May 30.	Newcastle-Heston Air Race.
June 6.	Brooklands Air Meeting.
June 20.	Flying Display and Air Pageant, Bristol Airport.
June 26.	R.A.F. Dinner Club Annual Dinner.

flying, a special mail plane should reach Darwin in 10 days. When the route is prepared for night flying the time would be cut down to about six days. For the present, however, we should be quite content with a 10 days' service to Australia. A rapid mail service as far as Calcutta ought, we consider, to be organised by the responsible parties without any further delay.

The fine performance of Lieut.-Commander Glen Kidston, in flying to Capetown in six and a half days, is a practical justification of the repeated contention of FLIGHT that special mail 'planes ought to be used for the speedy carriage of first-class mail matter; while, at the same time, it tends to justify the position taken up by Sir Eric Geddes that passenger services cannot be expected to run to the schedule of isolated pioneer flights. The public will not necessarily make that distinction, and it is quite possible, even probable, that a section of the Press may take up an attitude of sarcastic criticism towards the passenger service of Imperial Airways across Africa. It is fairly certain that the ordinary passenger could not stand such intensive air travel as that in which Glen Kidston has just indulged, and that if facilities for speeding to Capetown were provided the response from the public would be very small. Mails ought to be placed in quite another category from passengers, and we hold that subsidy conditions should make special provision for hurrying them across the Empire at the greatest speed of which the most specialised aeroplane is capable.

There will probably be some searchings of heart over the use by Glen Kidston of an American aeroplane with which to set up a record. It is not the first time that a British airman has chosen the Lockheed "Vega" to establish a record. It was in a machine of this type that Sir Hubert Wilkins made the flight across the Arctic from Alaska to Spitsbergen, which won him his knighthood. It may be that the "Vega" is the only machine in existence which could do the trip in the time with three persons on board. A specially equipped "Hart" could have done as well, or better, in time, but would only have carried two. This flight by Glen Kidston does not prove that American design is in advance of British design, but it so happens that British aircraft firms have not yet considered that there is any demand for that particular class of fast machine to which the "Vega" belongs. Our last two victories in the Schneider Contest have proved that when it comes to designing for pure speed our experts are not behind anyone else in the world. The "Hart" has also proved that we can meet a demand for a two-seater, which puts our Air Force in the van so far as that class is concerned.

We are only too glad to be able to add that the whole situation and prospects have been changed in the last couple of days (in fact, since the above

lines were in type) by the publication of specifications for a special mail-plane which the Air Ministry intends to order. These specifications are dealt with in some detail on another page. Here we may summarise them briefly by saying that the Ministry calls for a machine in which the main considerations will be reliability and speed (quoted in that order), with a cruising speed of 150 m.p.h., a useful load of 1,000 lb. of mail matter, and a range of 1,000 miles at cruising speed in still air. Glen Kidston's average flying speed was about 130 m.p.h. (ground speed). This new mail-plane ought to be able to do quite as well as that. Glen Kidston's "Vega" was somewhat heavily overloaded, and could certainly not have carried 1,000 lb. of mails. If any firm shows itself able to fulfil the requirements of the Air Ministry, the machine will be a far more useful one than the "Vega," at least for the specific purpose of carrying mails.

The fact is that while Glen Kidston set out with the avowed purpose of proving that mails could be carried faster than they will be carried by Imperial Airways in its passenger liners, the Air Ministry was already fully alive to the situation and had already taken steps to improve it. Glen Kidston might really have saved himself the exertion of his dash to Cape Town for all the difference it will make to the future air mail policy of the British Government. The flight will go down to history as yet another meritorious "stunt."

Maj. Woods Humphery has written to *The Times* on the subject, arguing that a purely mail service is too expensive to be profitable. No figures are quoted, but surely a specialised mail service run over a route already organised for passenger services should not be a very expensive matter. If a full load can be secured, mails must be much the most profitable sort of cargo to carry by air, while the needs of passengers for air space and comfort make them an extravagant form of cargo. Now, we may hope, the Government intends to insist that a full-scale experiment shall be carried out with special mail-planes, and this determination we very heartily approve. We conceive that, once reliability can be assured, it is a clear duty of a Government to send its mails by the fastest possible method. Even though the surplus of one department, the Post Office, may be cut down, the advantages to commerce should make up the loss in other ways. The question should be considered from the point of the greatest benefit to the community, and the conflicting interests of various departments ought not to be allowed to have any influence upon the decision. We feel that the Air Ministry has taken a very notable step which increases our confidence in the future of air transport. Had we not had an Air Ministry, would this step ever have been taken?



#### M. Michelin Dead

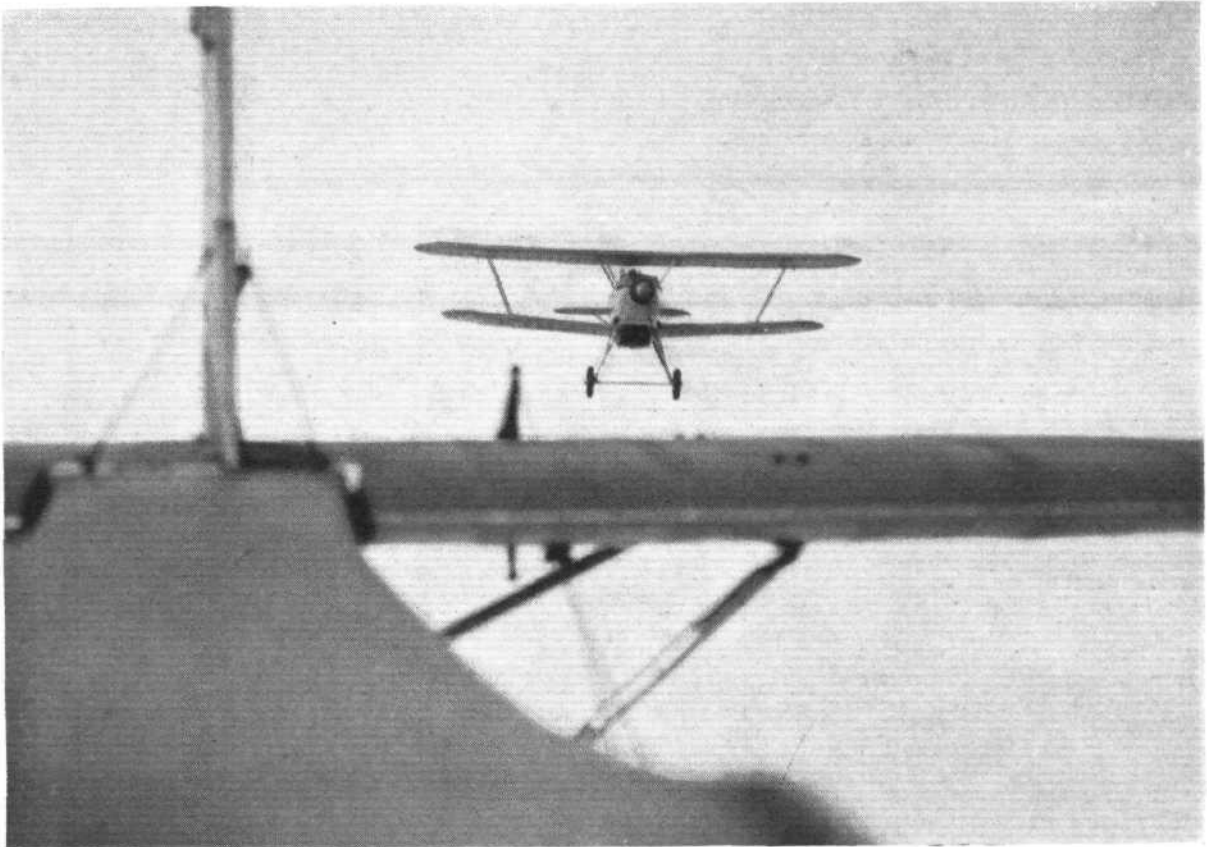
M. ANDRÉ MICHELIN, head of the Michelin Tyre Company of France, died in Paris, aged 78, on Saturday, April 4.

He was for a year president of the Aero Club of France, of which he was one of the founders, and remained on its executive committee. He was on the committee of the Automobile Club de France, of the Ligne Aérienne, honorary president of the Association of Aeronautic Industries, member of the Committee for Roads and Traffic, and an active patron of many associations for combating diseases. For his

services to aviation, especially during the War, he was made Chevalier of the Legion of Honour.

He was one of the keenest supporters of the French aeronautical efforts, and the founder of a series of prizes that helped to encourage French airmen. In 1910 he offered a prize of 100,000 francs (then £4,000) for the first flight from Paris to Puy-de-Dôme. Afterwards he instituted the Michelin Cup for distance and the Michelin Prize for speed, both of which did much to foster competition and progress in France.

# FURIOUS PRODUCTION



THESE FLIGHT Photographs show the latest production type of Hawker "Fury" (Rolls-Royce "Kestrel" engine), the Interceptor Fighter ordered for No. 43 (Fighter) Squadron.

In the upper photograph it looks curiously as if the

"Fury" was about to alight on the tail of H.M. Aircraft Carrier "Horsley." This and the lower right-hand photograph were obtained above the clouds recently, from a Hawker "Horsley." The two machines were piloted by Mr. Bulman and Mr. Sayer respectively.





## THE CIVILIAN COUPÉ

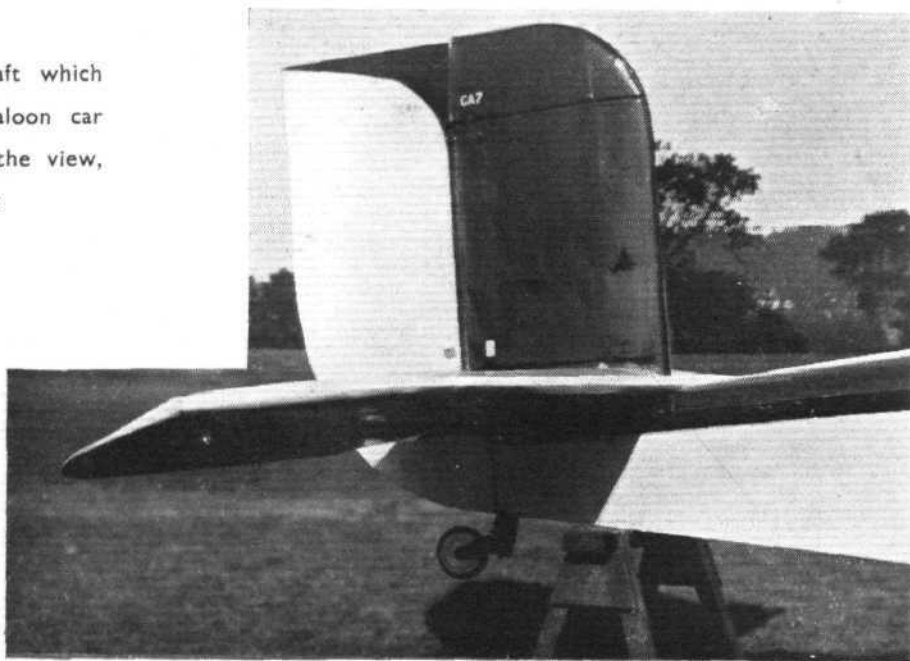
An interesting little cabin aircraft which provides all the comfort of a saloon car without in any way sacrificing the view, so essential to safe flying

**T**HE Civilian Coupé, which we recently had the pleasure of trying in flight, is now in production in the works of the Civilian Aircraft Co., Ltd., which are situated on the south side of Hedon, the municipal airport of Hull.

The machine has been altered quite a considerable amount since it was first shown in public at Heston in 1929. At that date the machine was definitely rather narrow and was fitted with the A.B.C. "Hornet" engine. It flew, however, quite well and embodied several novel features, which suggested that subsequent models might have many very definite advantages over existing light aircraft. This recent one, which is the first of the production type, is fitted with the Armstrong-Siddeley "Genet Major" engine and many details of the machine have been re-designed. The cabin has accommodation for two passengers sitting side by side, with the pilot on the left-hand side, while his passenger's seat is slightly staggered so that there is ample room for the shoulders of both of them, although the overall width of the fuselage has been kept small. As will be seen from the photographs, the wing is mounted at some height above the top longerons and the whole of the space between the wing and the fairing of the fuselage behind the pilot is filled in with cellophane. There is also a large cellophane panel in the roof of the cabin with the result that the pilot obtains a perfectly clear view both in front and behind him, on both sides, and above.

The wings and the fuselage are both covered in plyboard as are the tail units, which makes the machine an exceptionally strong proposition for the private owner whose machine may have to stand a large amount of knocking about.

Another improvement is the fitting of wheel brakes. These



**A MODERN TAIL :** The tail wheel shows the thoroughly practical way in which the Civilian Coupé has been designed as regards such details. This fitting makes the Coupé very comfortable when taxiing. (FLIGHT Photo.)

are the Bendix Perrott type in Dunlop wheels and are actuated in a particularly easy and useful manner. On the left-hand side of the pilot there is a hand lever which, when pulled half-way back on a ratchet, allows either brake to be put on by the action of the rudder bar, thereby greatly facilitating taxiing. If, however, it is required to put both the brakes on at once the lever is simply pulled further back and can be locked there, so that chocks are unnecessary when the engine is being run up or when the machine is standing in a wind. To even further enhance the value of the brakes, a particularly simple tail wheel has been incorporated instead of the more usual tail skid. This is actually a castor wheel from a trolley and is sprung by a large vertical spring. The advantage of a tail wheel over a skid was immediately apparent both when taxiing over rough and stony ground and also when turning the machine sharply by means of the brakes.

The wings are designed to fold and are locked positively by spring operated locking pins which obviate the necessity for having to knock in the pin as is so often the case. Behind the two seats there is a fairly large luggage locker which can be increased in length by opening a small door at its after end should it be desired to carry golf clubs.

The top speed would seem to be somewhere about 109 m.p.h., while the landing speed is fairly low. At the present moment there still remains a little work to be done upon the controls, since the ailerons are somewhat sluggish in their action and the rudder appears to be rather on the small side. These points are, however, being rectified and even apart from them the Civilian Coupé is nice to handle and should have a great appeal to those who do not wish to pay several hundred



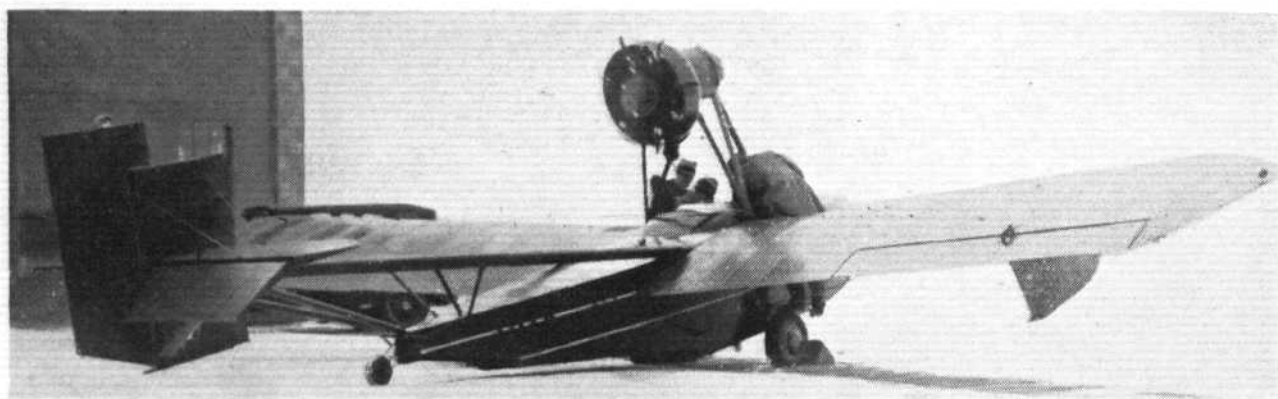
**A COMFORTABLE ARRANGEMENT :** No one can complain of the comfort provided in the cabin of this machine. It will be seen that the seats are slightly staggered thereby giving ample shoulder room. (FLIGHT Photo.)



pounds more to obtain such cabin machines as are at present available. A machine of this type has certainly been wanted for a very long time and it is really rather surprising that one has not been built before this. There is not the slightest doubt that side by side seating is the logical arrangement for privately-owned aircraft, particularly as a very large percentage of those who fly such machines will seldom wish to take more than one passenger with them. At the present moment the Civilian Coupé is the only machine catering for this market and it therefore has the field to itself. Few people who have flown in comfort in a machine of this type will ever again want to return to machines which necessitate their dressing up as for a polar expedition before they start off, for quite apart from being cold there is the great sense of relief a cabin machine gives in allowing the pilot to open and examine his maps in comfort.







Rear view of the "Privateer" before the start of the flight from St. Hubert to St. Agathe in wintry conditions.

## A DIMINUTIVE AMPHIBIAN

**M**R. J. A. WILSON, Canada's Controller of Civil Aviation, in the course of a recent speech to the Young Men's Canadian Club at Montreal, reminded his auditors of a frequently forgotten fact, when he pointed out to them how much the development of commercial aviation in the Dominion has been facilitated by the immense areas of water which form so large a proportion of the landscape. This feature is so outstanding that whole air services, like that of the Province of Ontario, operate entirely with float seaplanes and flying boats.

But Canada has also many fine airports, and even east of Winnipeg there are "dry hops" of sufficient length to make pilots pay a little extra attention to their revolution counters and their oil temperatures while crossing them. These conditions would appear to be a veritable invitation to amphibian aircraft, but it is notable that this type of machine has been almost entirely neglected. But for the Sikorskys, in the heavier class, and one "conversion" job among light aircraft, amphibians have been almost as rare as hen's teeth.

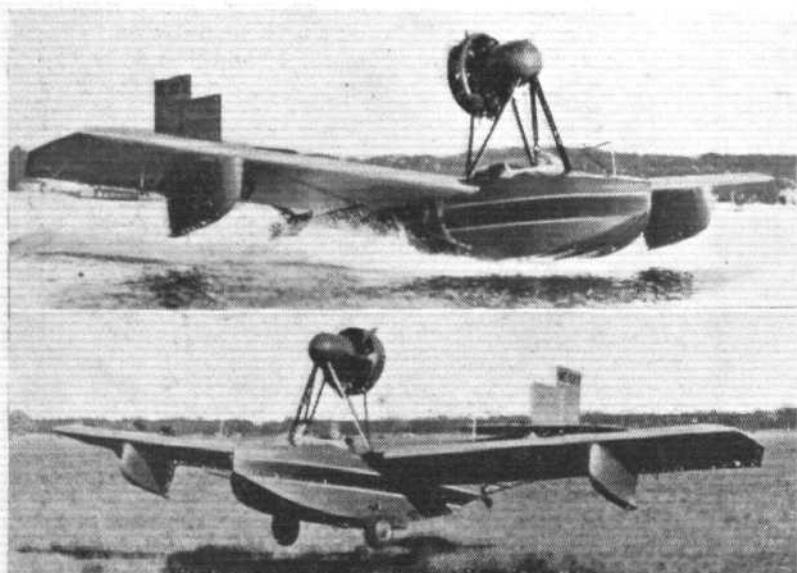
Now, in the "Privateer," introduced to Canada by Capt. C. F. M. Chambers, D.S.C., of Insurance Exchange Building, Montreal, we have a genuine and aggressive effort to provide light aeroplane clubs, private owners, and commercial operators of smaller aircraft with an amphibian that has all the advantages of its larger brethren with none of the drawbacks of the revamped float seaplanes which have so far failed to interest the Canadian market. The "Privateer" is distinctly a light aeroplane, and would appear to be an ideal machine for the private owner. Powered with the well-tried Warner "Scarab" engine of 110 h.p., carried on a mounting as accessible as the ingenuity of man could devise, it is easy to service. In the whole structure it would

be hard to find a superfluous bolt or an unnecessary curve. And it is the kind of machine one steps into with the same confidence one feels when entering a car.

Although not originally stressed for this performance, it has this winter, under the pilotage of Capt. Ted Cooper, D.S.C., on numerous occasions landed on its boat bottom on deep snow. On one occasion at least, when patchy snow held both machines with wheels and machines with skis earth-bound, it was manœuvred off on the combination of boat bottom and wheels. Its makers, "Amphibians, Inc.," of Garden City, Long Island (who are the successors to Ireland Aircraft), are understood to be restressing the hull to see what, if any, alterations are necessary to make this kind of thing part of the regular repertoire of the "Privateer."

As the illustrations indicate, the machine is a monoplane, with its air-cooled radial engine set on a simple five-legged strut arrangement. Pause for a moment to take a look at this mounting! The pair of "V" struts on either side carry the weight, and the thrust is transmitted through the diagonal strut which runs right down to the keel. In any crash tending to throw the engine down or forwards, it is the latter strut which collapses. If that happens, the pair of "V's," pivoted to the hull, fall forward, carrying the power plant well forward of the cockpit, and giving the occupants a splendid chance to fly again another day.

The hull, a spruce and ash frame, with an "Alclad" duralumin skin, has two steps, and terminates considerably in advance of the tail unit. The entire skin can be put on without panel beating. Wings are composite; spruce spars and stainless steel ribs, fabric covered, as are the tail surfaces. These latter are carried on tubular outriggers, well clear of the water in taxiing, and borne high in level flight. The



These three views—on the water, taking off from land, and flying—give a good idea of the unusual features of the "Privateer" amphibian.



The "Privateer" in front of the big Government hangar at St. Hubert Airport, Montreal. Captain Ted Cooper and Captain Chambers, respectively pilot and owner of the machine, are in front of it, and the other begoggled figure is the Hon. Athanase David, Provincial Secretary of Quebec, who was the first official passenger when he chartered the machine to fly him to his home at Ste. Agathe, where the landing was made on deep snow.

stabiliser is permanently set, but a method of adjustment for nose-heaviness is provided by the lift struts below the tail-plane, which can be rotated from the cockpit, and which, being deeply faired, can make an appreciable difference to the "trim" of the machine.

Low-pressure tyres provide all the shock absorption considered necessary, and allow the landing gear to be reduced to the most simple components. One pull of a lever raises the wheels to a position partly within the contour of the wing, and a push on a button allows them to drop back into place and lock there. The steerable tail wheel with a fairing which acts as a rudder gives easy manoeuvrability on land or water.

The gross weight of the "Privateer" is 1,950 lb., of which

600 lb. is useful load. The 24 gallons of fuel are carried in the hull, and the 2 gallons of oil in the nose of the engine nacelle. Overall length is 28 ft.; height, 8 ft. 4 in.; span, 38 ft.; chord, 72 in.; and the area of the main planes is 198 sq. ft., giving a loading of just about 10 lb. per sq. ft.

The cockpit is 48 in. wide, and contains as standard, stick control, life-preserver cushions, fire extinguisher, and the usual instruments. A Heywood injection self-starter for the engine is a standard fitting that exemplifies the bid for private-owner patronage. Tools, anchor and rope, motor cover and first-aid kit are also included. Special equipment at extra price includes brakes, dual control, running lights, and special colour paint finishes.

A. H. S.

## THE CAPE FLIGHT

**L**T.-COMMANDER GLEN KIDSTON and Lt. G. Cathcart Jones have succeeded in their "blazing the mail" flight from England to the Cape, having accomplished the 7,500-mile journey in six and a half days—two days under the previous record established by Mr. Caspareuthus last October in his "Puss Moth."

As briefly recorded last week, Commander Kidston together with Lieut. Cathcart Jones, who acted as second pilot and navigator, and Mr. T. A. Vallette as wireless operator, left Netheravon at 6 a.m. on March 31, with the intention of flying to the Cape in six days in order to demonstrate how our air mails could be speeded up by using fast machines specially designed for such work—of special interest just now in view of the specification for an air mail plane just drafted by the Air Ministry and published on page 318 of this issue.

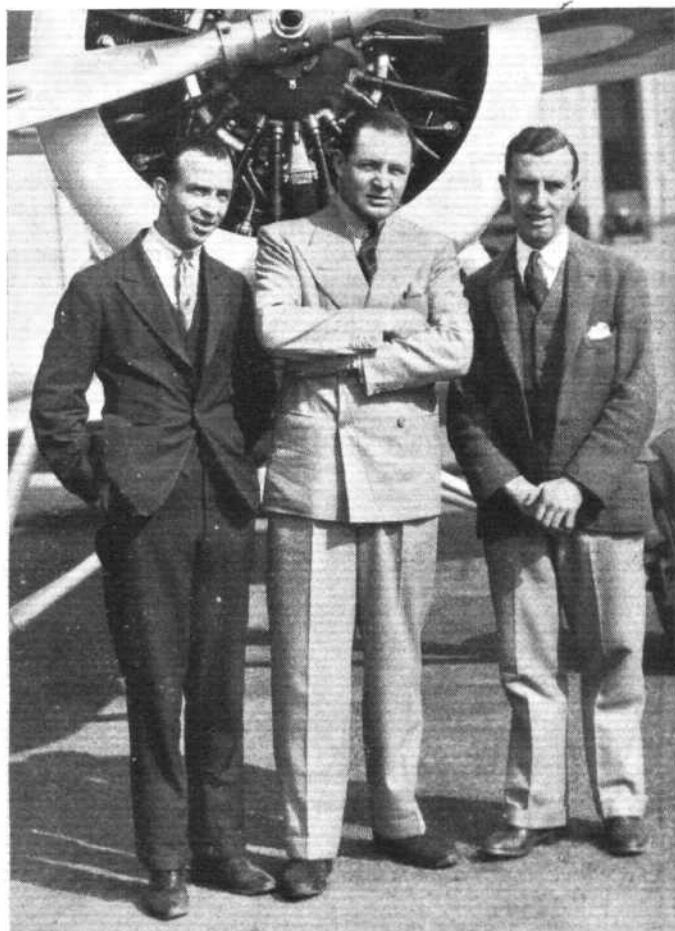
The first stop was made at Naples, which was reached late in the evening. Proceeding at 6 a.m. next day, they flew to Malta, where a brief stop was made for refuelling, and then on to Cairo, 12 hours after leaving Naples, and 34 hours out from England. At Cairo, the wireless operator was "exchanged" for a mechanic.

They left Cairo a few hours later, taking advantage of the full moon, and passing over Khartoum about mid-day on April 2, reached Malakal in the evening—a "hop" of 1,600 miles—and Juba shortly after. Continuing early on April 3, a short hop of 400 miles was made to Kisumu, but they left early next day and completed 1,750 miles to Bulawayo stopping en route at Salisbury.

It was their intention to fly direct to Cape Town next day, April 5, but a slight mishap—the only one—necessitated a forced landing at Lichtenburg owing to oiled plugs. After a short delay they were able to proceed to Pretoria, close by, where matters were put right.

The final stage to Cape Town was completed on April 6, when they landed at 5.5 p.m. at Maitland aerodrome, where large crowds gave them a tremendous welcome. The total flying time for the flight was 57 hour, 10 min., and the average speed 131.8 m.p.h.

The Lockheed "Vega" machine (which was equipped with a Pratt and Whitney "Wasp" engine, Scintilla magnetos, Smith's Instruments, and Shell Spirit and Oil) was described in our last issue.



THE FLIGHT TO THE CAPE: From left to right: T. A. Vallette (wireless operator), Lieut.-Com. Glen Kidston, and Lieut. O. Cathcart Jones.



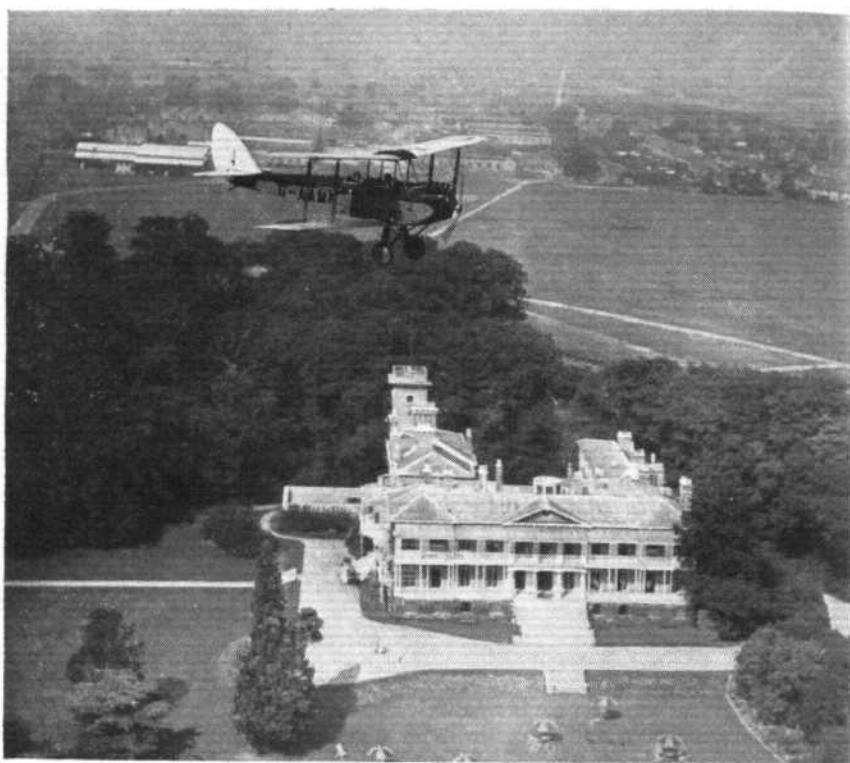
## THE GROWTH OF N.F.S.

A unique organisation with vast possibilities of doing much to place private flying on a firm basis

THE last few months have shown a very radical change in the policy adopted by those responsible for the welfare of National Flying Services, Ltd. It will be remembered that, not so long ago, after approximately one year's working, the Board of Directors was re-formed, and many of those responsible for its inception dropped out. This, together with the adverse balance-sheet which was presented at the first annual meeting, was taken by many as a sign that the company was on its last legs. After reconstruction, however, matters began to look very much more cheerful, and the new Board, under the energetic management of Col. The Master of Sempill, together with Sir Alan Cobham, has already done a great deal to mitigate the somewhat dire effects of a very bad beginning. Col. Sempill is proverbially one of the world's hardest workers, and the unflagging zeal with which he has characteristically thrown himself into saving N.F.S. cannot but have the requisite effect.

One of the first economies to be effected under the new management was the closing down of the large London office at Grand Buildings, Trafalgar Square, and the opening up of the Grange at Hanworth as the central office of the company. The Grange is a large and spacious building, situated on the west side of Hanworth Park, which hitherto had not been utilised to its full. Now, however, it rather resembles a beehive, and we have no doubt that such administration as must be done from a central office will be more efficiently carried through at Hanworth than it could have been up in London. The vicissitudes which the management of N.F.S. have had to cope with since the beginning have been many and varied, and not the least of these has been over ambition and lack of realisation that an organisation such as this must be decentralised. This latter, we understand, is being considered very seriously, and it is possible that the provincial clubs will become more and more self contained as regards individual management, while relying on the central station at Hanworth for their aircraft and overhaul work, etc.

When N.F.S. opened in September, 1929, with a resonant flourish of trumpets, there was a lot of talk of their taking over the management of the majority of flying clubs in the country, and it is probable that their methods in advocating this



**HANWORTH CLUB :** The central N.F.S. Workshop, together with the "Grange," where the head office is now housed, can be seen on the far side of the aerodrome behind the tail of the club Moth (Cirrus III). The wonderful old club-house, with its well-kept lawns and gardens, is best seen from the air. (FLIGHT Photo.)

step were not too tactful, since a very regrettable amount of ill-feeling was engendered over the whole proceeding, with the result that N.F.S. and its provincial clubs has ever since had to combat a large amount of, probably unjustified, antagonistic feeling.

### HANWORTH CLUB

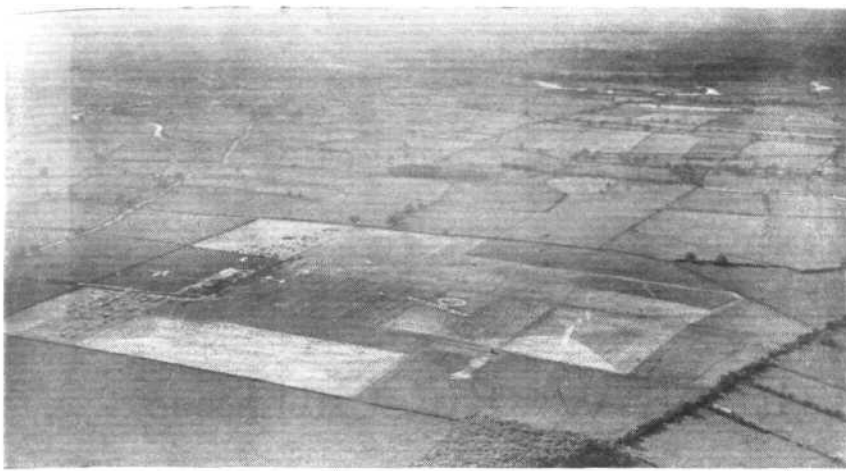
Even the central club at Hanworth has never been really popular with flying people in general, in spite of the fact that it has a large membership, since this membership has mainly been drawn from a particular class of Londoner who has only just come into aviation. The fact that they have attracted this class of member is really rather a feather in their caps, since undoubtedly anyone who brings newcomers into aviation is to be congratulated. Running coincidentally with this unfortunate antagonism has been, the far too often reiterated cry of trade depression, with the result everybody has, we feel, been brought to think that the state of things in general was far worse than was actually the case, and this undoubtedly has not made the management of N.F.S. any the easier.

Hanworth itself has now taken on a new lease of life, and a committee of members, including Major Petit, Flt.-Lt. M. A. Findlay, Capt. L. Hutcheon, Lt. R. T. Rodd, Miss A. Sale-Barker, and the Dowager Lady Swaythling, has been formed, under the very able chairmanship of Mr. M. L. Bramson. Their work already has benefitted the club to a large extent, and several innovations have been made which have gone a long way to create more of that spirit which we usually associate with flying matters, and we trust that what they have done is merely the beginning of far better management in the future. There is no reason why Hanworth



**THE ISLAND SITE :** Hanworth Club is situated on an "island," so that there is a usable aerodrome on each side of it, and it is thus pleasantly isolated from any except bona-vide visitors. (FLIGHT Photo.)





**THE NOTTINGHAM FLYING CLUB :** Situated at Tollerton Aerodrome the Nottingham Flying Club is in ideal surroundings and clears the smoke of the city. (FLIGHT Photo.)

members, so that although during the week it is comparatively empty, they cannot afford to have a smaller place if the week-end members are to be satisfied.

### THE YORKSHIRE AERO-PLANE CLUB

Sherburn-in-Elmet is the aerodrome for Leeds, and it is here that the Yorkshire Aeroplane Club is situated. The situation would first lead one to suppose that the membership must of necessity be small, since it is over 14 miles from Leeds and apparently at the end of nowhere. Such, however,

is certainly not the case, as its membership is over 220, and includes residents of Bradford, York, Leeds, Sheffield, Scarborough, and in one or two cases from even further.

Some 150 of these are flying members, while fifty pilots have been trained at the club. Private owners possess three Puss Moths, three Moths and three Bluebirds, and the work done there during week-ends is simply amazing. Capt. Worrall is, of course, an ideal pilot-manager for such a club, and his geniality and rubicund countenance are well known amongst all those who fly. The club is fortunate in having large hangars, albeit somewhat dilapidated and draughty ones, and a spacious brick-built building for a club-house, which they are able to rent from the Burnett Wagon Works. Mr. H. A. Love has for some considerable time been assistant to Capt. Worrall, but we understand that he is shortly being moved to Hedon. The President of the club is Lord Grimthorpe, who has recently learnt to fly and is closely associated with Air Speed, Ltd.

should not be a very great success as a club, and in fact, from the flying point of view it certainly is, as the amount of flying which has been done there is vastly more than at any other club in the country, as is also the number of pilots who have been turned out. It is only this unfortunate anti-N.F.S. feeling which has grown up in flying circles, which has to be uprooted, and this new committee will, we think, be quite capable of squashing it. Most excellent dances and entertainments of various kinds, including luncheons to well-known public bodies, are held periodically, and these are well attended, while very generous invitations have been sent to other clubs making their members honorary members of Hanworth during any visit they care to make there. When one comes to the question of provincial clubs, the matter is rather different, since here they were dealing with clubs which had already been formed, and it was a question of modifying their new management to operate in harmony with the existing committees.

### HULL AERO CLUB

During a recent trip in one of the N.F.S. Moths, we visited Hull, Leeds and Nottingham, and found them in varied stages of prosperity. At Hedon aerodrome, which is the municipal airport of Hull and the home of the Hull Aero Club, matters are particularly difficult. At the present moment, since Hull is not a very rich city, its younger generation have not a great deal of money or time to spend on flying; there are, however, 80 flying members and 70 non-flying members, and over 17 pilots have been trained for their "A" licences there. They have three private owners of aircraft and one aircraft factory situated on the aerodrome. This latter is the Civilian Aircraft Co., Ltd., its product, the Civilian Coupé is briefly described on pages 308 and 309.

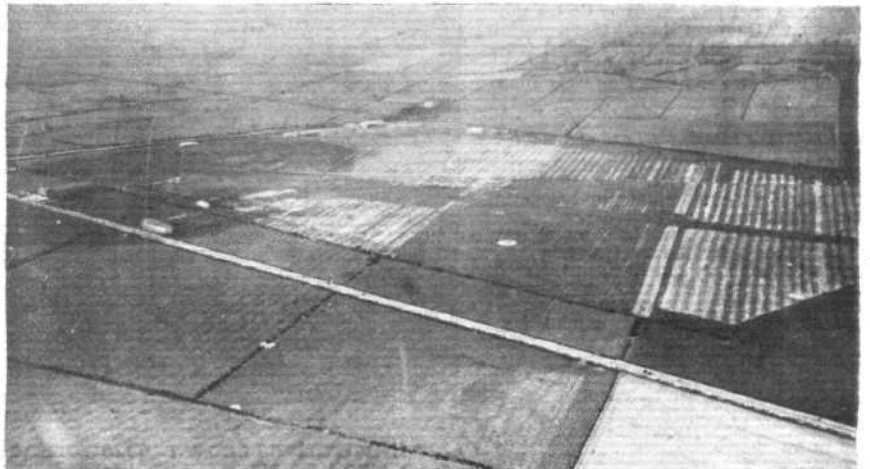
Flt./Lt. I. W. C. Mackenzie is the pilot in charge, with Mr. B. E. Moody as his assistant. The Secretary is an ex R.A.F. padre, the Rev. Mr. Newcombe, whose enthusiasm is unbounded and whose mission in life seems to be modelled on "Cobham lines" since he makes it his particular job to educate the young and particularly those at schools in Hull. With this end in view they have organised what they call "Britons' first Schools Aviation Day" on Saturday, April 11, when a flying display will be held and over 4,000 school children have been invited to attend.

Hedon is a little unfortunate in its situation, since it is entirely dependent on Hull for its members. Bounded on the south by the Humber, and on the north and east by open somewhat bare country, it has no other direction to which it can turn except Hull. Backed as it is, however, by the municipality, we do not think it will be long before the membership grows to very large proportions. The club-house both here and at Nottingham is to the standard N.F.S. provincial type, and is particularly palatial for such a club, but like so many flying clubs it has, during the week-ends, to cope with a large influx of

### THE NOTTINGHAM FLYING CLUB

Tollerton aerodrome is another municipal aerodrome, it being that for Nottingham. The pilot-instructor in charge is Mr. R. T. Shepherd, and he is making a particular matter of cross-country flying and pilotage. With this end in view he has been taking navigation classes for members each Friday, and proposes to do all he can to encourage cross-country flying, it being his view that members who are capable to go anywhere are much less risk to the companies' machines. The club did not have an extremely easy beginning, but it has since shown steady improvement, and now has 71 flying members with 31 "A" pilots, of whom 17 were trained in 1930. The weather latterly has been, of course, very bad indeed, but, in spite of this fact, considerably over 10 hours a day was the average achieved during the month of February.

The Nottingham club is not quite so unfortunate as Hull, since it is able to draw its members from a fairly wide district having towns situated at all points of the compass, chief of which are Mansfield, Lincoln and Derby. This is naturally an advantage, and the steady growth of the club both on the flying side and the social side, is doing a great deal to get new members and place the club on a sound footing.



**THE HULL AERO CLUB :** At Hedon, the Municipal Airport for Hull. The long building on the left of the photograph is the factory of the Civilian Aircraft Co., Ltd. (FLIGHT Photo.)



## SOME MORE NEW RECORDS

The French Airmen, Joseph le Brix and Marcel Doret, improve upon the Duration and Distance Records recently established by Lalouette and Reginensi and establish seven new records.

**S**EVEN new International Records, comprising those for duration and distance for 'planes carrying various loads have just been established by the French airmen Joseph le Brix and Marcel Doret.

Flying a new Dewoitine low wing monoplane, D. 33, specially designed for long-distance flights, powered with an Hispano-Suiza 650 h.p. water-cooled direct drive, le Brix and Doret took off from the Istres aerodrome (South of France) at 6.36 o'clock, Monday morning, March 23 last. The plane carried 4,700 litres (1,036 gallons) of petrol as available fuel and 250 litres (55 gallons) of oil. In addition to the two pilots, the 'plane also carried a load of 2,160 kg. (4,762 lb.), consisting of 3,000 litres (661 gallons) of petrol, in order to make up the necessary load to establish the various records sought after. This additional amount of petrol was placed in a portion of the fuel tanks, which were sealed, and cut off from the rest of the tank system. It could not, therefore, be touched during the flight. No wireless operator was carried, and the radio set was also dispensed with. The 'plane thus equipped weighed 8,965 kg. (about 9 tons). The "take off" was made easily, after a run of about 1,300 m. (4,225 ft.) in 68 seconds.

The airmen traversed a triangular course, Istres-Montpellier-Nîmes, at first, and encountered good weather at the start. Toward the end, however, they were greatly hampered by fog, which came up during the night, and obliged them to shorten a portion of their course.

Le Brix and Doret remained in the air for 32 hours 17 minutes, and landed at Istres Airport at 2.54 o'clock Tuesday afternoon, having traversed some 4,662 km. (2,914 miles).

The Dewoitine 'plane thus established the following records:—

*For a 'Plane carrying a Load of 500 kg. (1,102 lb.)*

*Duration.*—32 hr. 17 min. (existing record, 23 hr. 22 min., made by Costes and Codos flying the "Question Mark," August, 1930).

*Distance.*—4,662 km. (2,872 miles) (existing record, 4,361.9 km. (2,710.5 miles), held by Costes and Codos on "Question Mark," 1930).

*For a 'Plane carrying a Load of 1,000 kg. (2,205 lb.)*

*Duration.*—32 hr. 17 min. (existing record, 18 hr. 1 min., made by Costes and Codos on "Question Mark," 1930).

*Distance.*—4,662 km. (2,872 miles) (existing record, 3,309.9 km. (2,056.7 miles), made by Costes and Codos on "Question Mark," 1930).

*For a 'Plane carrying a Load of 2,000 kg. (4,410 lb.)*

*Duration.*—32 hr. 17 min. (existing record, 17 hr. 4 min., made by Lalouette and Reginensi, March 10, 1931).

*Distance.*—4,662 km. (2,872 miles) (existing record, 2,678 km. (1,664 miles), made by Lalouette and Reginensi, March 10, 1931).

*Speed over 2,000 km. (1,242.8 miles).—*151.36 km. per hour (94 m.p.h.) (ex-

isting record, 147.42 km. per hour (91.6 m.p.h.), made by Lalouette and Reginensi, March 10, 1931)

The new record holders are among the best known and most popular pilots in France. Beginning his career as an officer in the French Navy, Joseph le Brix did brilliant work in the Morocco campaign several years ago, and shortly afterwards attained distinction as the navigator of Dieudonne Costes in his trip around the world during 1928. Le Brix has also made several long-distance flights across Europe, and was scheduled to make an attempt for a transatlantic crossing in company with the late Maurice Drouhin shortly before the latter's death a couple of years ago.

Marcel Doret has often been termed the "King of stunt flyers." As chief pilot for the Dewoitine Co. he has exhibited their 'planes all over Europe, and last autumn made a trip to the United States, taking part in the International Air Meeting at Chicago, where his aerobatic flying was greatly admired. Doret always flies a Dewoitine Pursuit 'plane at these various meetings, and has been frequently adjudged the winner over the best aces of Europe.

The Dewoitine 'plane, D.33, used by Doret and Le Brix in this flight is one of the prototypes (new types) approved a short time ago by the Air Ministry, a number of which have been making their trial flights of late. A low-wing monoplane of cantilever construction, with a long narrow fuselage presenting a highly developed finesse, it is a machine specially designed to establish long-distance records. It is constructed entirely of duralumin along the well-known Dewoitine lines.

The wings are of trapezoidal form, covered with sheet duralumin, and have their ends rounded elliptically. The fuel tanks, 16 in number, are installed in the wings on either side of the central longeron. They have a total capacity of 8,000 litres (1,102.5 galls.). The slight dihedral angle at which the wings are mounted affords a gravity flow for the

fuel from this tank system to a manifold installed in the fuselage, which is regulated by a series of taps. The landing gear is of the split-axle type with a spacing of 4½ m. (14½ ft.) between the wheels, which are mounted on ball-bearing axles. This undercarriage is braced by struts to the lower part of the fuselage. The 'plane is equipped with double controls.

The principal characteristics of the Dewoitine D.33 are as follows:—Wing span, 28 m. (91 ft.); wing surface, 78 sq. m. (840 sq. ft.); length, 14.4 m. (47 ft.); height, 5 m. (16 ft.); capacity of fuel tanks, 8,000 litres (1,102.5 galls.).

R. C. W.



Our illustrations show the Dewoitine D.33 Monoplane (650 h.p. Hispano Suiza) on which the new records referred to above were made.





# PRIVATE FLYING AND CLUB NEWS



## SURREY AERO CLUB OPENING

THE new club-house of the Surrey Aero Club was officially opened by the President, Capt. Woolf Barnato, on Saturday, April 4. The ceremony itself took the form of christening the aerodrome by means of a bottle of champagne which Capt. Barnato threw overboard from a Moth. Since, however, it was attached to a rather large parachute, it did not break as was anticipated and spread its valuable contents over the surface of the aerodrome, which perhaps was just as well since it was then possible to put it to a better purpose. The start of affairs was marred by what might have been a very serious accident when a Moth which was started up on full throttle, with neither chocks in front of the wheels nor a pilot in the cockpit, ran away, and after a hectic career finished by ramming a Bluebird. The accident should teach a salutary lesson to many of the younger pilots who are apt to treat their aircraft with a familiarity bordering on contempt. The invariable rule that the greatest care must be taken in the starting up of an aircraft engine and that whenever possible this should never be done without either a qualified person in the cockpit or chocks in front of the wheels has been repeated so often that we should have thought it unnecessary to mention it again here, but even those who are experienced in such matters sometimes forget to take just that sufficient care which makes flying safe. Fortunately this Moth elected to finish its career away from the crowd, but it started towards them and had it continued, the opening of the Surrey Aero Club would have become a very sad affair. The afternoon was not advertised as a pre-organised and elaborate flying meeting, and the flying which followed the christening merely took the form of a fly-past with subsequent demonstrations by such pilots on different machines as had arrived. These were Mr. Rawson in an Autogiro (Genet Major); Mr. Allen in the Cirrus-Hermes Engineering Co.'s Avian (Hermes II); Mr. Rogers in a Klemm (Salmson); Mr. Russell in a Redwing (Genet II); Mr. Rawson in an aerobatic display on one of the club Moths (Gipsy I); and Mr. Dick in a Bluebird (Gipsy I). There were about 25 machines present, including several private owners, and the crowd appeared to enjoy the afternoon's flying. The club-house deserves special mention, since it is certainly unique as flying club-houses go. It is a sixteenth century old oak-timbered manor house which we understand has largely been presented to the club by Miss Delphine Reynolds who is at present flying to Capetown via the west coast route, together with Mr. Pudney, in a Bluebird seaplane (Gipsy III), and it certainly makes the most delightful old club-house one can

possibly imagine. The interior is of old oak beams and tastefully arranged with simple furniture. The gardens are to a certain extent being re-arranged but when finished will entirely be in keeping with the house and together form a most delightful spot. Other amenities at the club are hard and grass tennis courts and a small nine-hole golf course. There is also, under construction, a large open air bathing pool. Sleeping accommodation can also be provided for members as well as the other usual club-house arrangements. The club is within easy reach of London and Brighton, and a car service is in operation from Horley and Three Bridges stations, each of which is about two miles distant from the aerodrome.

THE DELHI FLYING CLUB put in 211 hrs. 10 mins. flying time, while privately-owned machines had a further 30 hrs. 30 mins. during February. At the beginning of the month, the whole fleet of club aircraft, together with Mr. R. E. Grant Govan's Puss Moth, went on a week's trip to the United Provinces and Gwalior. Sir Victor Sassoon has started re-qualifying for his "A" licence, and His Highness the Maharaja of Jodhpur, also one of the Patrons of the Club, has commenced his tuition. As was announced in FLIGHT, on March 13, Mr. Bhagat B. Lal, a member of the Club, was the first Indian gentleman to take his "B" licence, and he has now been appointed assistant instructor and secretary to the club. During the R.A.F. pageant, held at the civil aerodrome, Safdarjung, on February 14, three Indian pilots, Messrs. Bhagat B. Lal, R. N. Chawla and P. D. Sharma, who were trained by the Club, gave an extremely good exhibition of formation flying. A reciprocal arrangement has been instituted between all the flying clubs in India whereby members of one club can use another club without payment for a period of one month, provided they bring with them a letter of introduction from the secretary of the club to which they belong.

CINQUE PORTS FLYING Club are glad to report that their instructor, Mr. K. K. Brown, has now recovered from his illness, and has been able to take over work again from Mr. Newman, who has so ably deputised for him during the last few weeks.

TANGANYIKA FLYING CLUB.—The Tanganyika flying club held a very well attended meeting at the New Africa Hotel on Monday, February 16. After a lengthy discussion, it was finally decided that non-Europeans should only be permitted to join as flying members, that is, they should not be entitled to all the privileges of the club, and it was agreed that the entrance fee and annual subscription should be lower in their case than it is for ordinary members. Sir Donald Cameron, Sir Stewart Symes and Lord Wakefield were elected as patrons, while Mr. Lockheart-Mure has been appointed secretary.

PHILLIPS & POWIS AIRCRAFT (Reading) are experiencing difficulty in deciding the nature of the ceremony for opening their new club-house, and are offering a prize for the best suggestion. They are prepared to give a free book of tickets for three hours either solo or dual flying, to whoever submits the best scheme for a programme covering proceedings for the afternoon and evening. It is felt that pageants are not very popular at present, and they, therefore, hope that some of our readers will be able to suggest



The 16th Century Manor House which the Surrey Aero Club have for the Club House. It is placed in very beautiful gardens. (FLIGHT Photo.)

an appropriate substitute. Lt.-Col. Shelmerdine has promised to officiate at the opening ceremony and letters with suggestions should reach Phillips & Powis Aircraft, Ltd., Reading Aerodrome, Woodley, Reading, not later than April 18. The new aerodrome buildings, which have been designed and carried out in an exceptionally attractive way

by the En-tout-Cas Co., of Syston, near Leicester, are now practically ready, and will accommodate both the school and the Reading Aero Club, and, in addition, provide a comfortable lounge, restaurant and bar. Living accommodation will be available for members and pupils at economical rates.



# GLIDING



## GLIDING, AUTO-TOWING AND SOARING IN AMERICA

(A lecture before the British Gliding Association at the Junior Institution of Engineers on Thursday, April 2.)

**H**ERR WOLF HIRTH who has been in America furthering the progress of gliding, and is now on his way back to Germany, broke his journey in England and delivered, last Thursday, one of the most interesting and instructive lectures ever heard on the subject. Herr Hirth has a very pleasing manner as a lecturer and a fluent command of the English language.

Colonel the Master of Sempill in introducing the lecturer said they were all pleased to welcome him over here, and he felt sure that everyone present would know that Herr Hirth and Herr Kronfeld ranked as the two premier sailplane pilots in the world. He informed the assembly that the lecturer had already showed his prowess in England by making a soaring flight of over two hours duration from Firle Beacon on a Lowe-Wylde sailplane. Herr Hirth said that he had seen a considerable amount of Auto-Towing during his life, and his first experience dated back to very many years ago when Mr. Fokker used this method for launching his gliders in Holland. In 1928, he said, he went as part of an expedition to the United States to teach gliding in that country. They had very great difficulty he said, in finding suitable gliding grounds and it was not until they found a district at Cape Cod, similar to the Rössitten district that they were able to do very much. The United States in general, he said, was not suitable for primary training from slopes and it was for this reason that auto-towing had become so well-known. Furthermore, both motor cars and petrol were very much cheaper. He explained that at the start of the movement, the ordinary, common or garden, primary glider had been used and several pilots, all of whom had had experience on power-driven aircraft were killed. This was invariably due to their using the wrong type of machine and also to their trying to do more than was sensible on such machines.

Mr. Bowlus and the Franklin Brothers, saved the movement, Herr Hirth said, for they both made special gliders suitable for auto-towing and soaring.

The first ground which they found really suitable for soaring was that at Elm, N.Y., and here, the presence of large pine forests on the slopes gave rise to up-currents which could be utilised very easily. This was due, he explained, to the fact that the pine trees conserved the heat during the day and towards evening gave it up, thereby causing a continuous up-current upon which it was possible to make extended soaring flights.

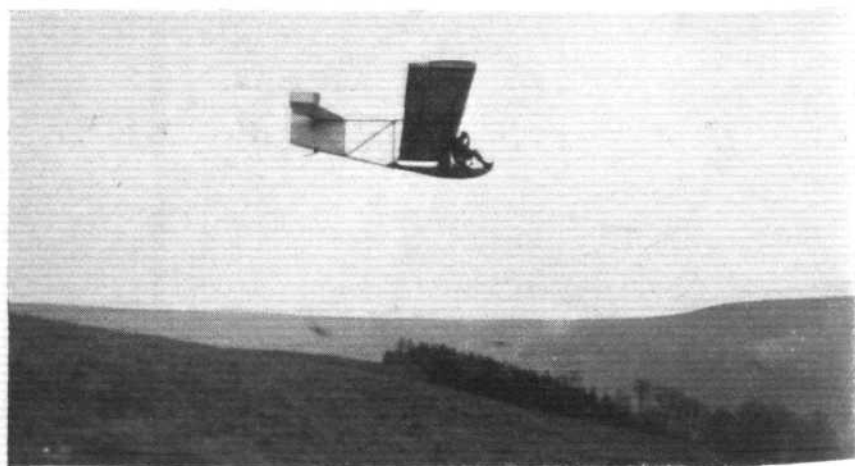
During his lecture, Herr Hirth recounted many amusing incidents of the way in which a pilot of a glider making a soaring flight was refuelled with sandwiches on the end of a string from another glider which went above him; this, however, could only be done with machines of the same speed. He also told the assembly how he had had considerable success in making a map showing the up-currents present on the different slopes in certain winds. Although the country in general did not offer many suitable sites for primary training, it gave, he said, exceptionally good opportunities for cross-country flights. There was, for instance, the Bald Eagle ridge which enables flights to be made easily, of from 300—500 miles in length, and he quoted the evidence of mail plane pilots who said that by utilising the up-currents of this ridge they had been able to fly along it with their engines well throttled down without losing height.

Herr Hirth then expressed his satisfaction at the Itford site on the South Downs, which he said was one of the best sites he had ever seen in the world.

Continuing on the subject of auto-towing, he announced the fact that he was returning to Germany and hoped to institute this form of training there. It was, he said particularly good when there were no hills and was certainly no more dangerous than the shock cord method of launching primary gliders, although he qualified his remark by saying that he ought not really to speak of either being dangerous, but he did so since his command of English did not enable him to use any other word. In support of this contention, he said that the Bowlus School in America had 15 students in training, seven of whom had obtained their "B" licences, all without any accident. A further application of towed flight was explained, when he said that in several places in the States there are rather thickly-wooded slopes over which it was dangerous to make a take-off from the top by means of the shock cord method. An open space at the bottom, however, enabled an excellent take-off to be made by the auto-towing method, from which it was possible to gain a height of several hundred feet and from thence to glide over and remain above, the up-currents from the slope. Thereafter followed an exposition of the vast field which yet remains to be explored in flying in thermal up-currents, and Herr Hirth said that he would very much like to have experience of these in the tropics. He pointed out that as yet only Herr Kronfeld and he himself had done any very serious work in this line, and he recounted how after many months of badgering he was able to get the authorities to give him permission to make a flight over the City of New York, utilising the thermal current which arose off the hot buildings and roads, for this purpose. This he did, but after some 45 min. was forced to come down since all the traffic in that part of the city was disorganised by people standing and watching him, until the traffic policeman felt like shooting him down.

In reply to some questions after his lecture, Herr Hirth explained that the greatest up-currents in cumulus clouds existed at the point where the highest peak arose out of the cloud, and this was to be discovered, when one was flying directly under the cloud, by the places where it was darkest.

After the lecture several films were shown of flights being made by all the well-known people in the U.S., including Herr



The Dickson glider built by the Aircraft Club, Harrogate.



Birth himself, and such pilots as Messrs. Frank Hawks, O'Meara, Froehlich and many others. These concluded with an excellent record of his flight over New York City which must rank as one of the achievements in gliding during the past few years.

**THE LONDON GLIDING CLUB** is, together with Thomas Cook & Son, Ltd., arranging a visit to the Wasserkuppe in connection with the Rhön competitions. The party will stay at the Hotel Deutscher Flieger and as the accommodation is limited, no reservation can be accepted after May 5. In order to obtain special reduced travel rates it is essential that the party should start together, although the dates of return can be arranged to suit individual convenience. The trip as outlined, will take 18 days from London back to London, while the cost will be :— second class rail and steamer (third class in England) £17 2s. ; third class rail and second-class steamer £15 4s. All correspondence with regard to the tour should be addressed not to the club, but direct to Thomas Cook & Son, Ltd. The party will travel as follows :—July 24, depart London via Dover-Ostend. July 25 arrive Frankfurt and continue by motor-coach to the Wasserkuppe ; July 26-August 8, at the Wasserkuppe ; August 9, depart by motor-coach to Frankfurt ; August 10, arrive London. The fares will include tickets from London to Wasserkuppe and back, reserved seats on trains where possible, meals en route, hotel accommodation consisting of plain breakfast, table d'hôte luncheon and dinner, and sleeping accommodation for the period, gratuities to hotel and catering staffs and general services of uniformed interpreters at principal points on the route. Hotel accommodation may be provided for a longer period at the rate of 10s. for each extra day and a corresponding amount will be deducted in the event of the length of the stay being reduced. The right is reserved to alter the fares quoted or to withdraw the tour if necessary.

**HUDDERSFIELD GLIDING CLUB** :—A new gliding ground has been secured by the Huddersfield gliding club. This is situated near the Flouch Inn on the Huddersfield-Sheffield road, about 11 miles from Huddersfield. It is 340 yards long and faces west and is much more satisfactory than the old ground at Bradley Bar.

**KENT GLIDING Club** have, together with B.A.C., Ltd., organised a series of Auto-Towed gliding demonstrations in Kent. The first will be held at Star Aerodrome, Gillingham, on Sunday, April 12, and the second at Sutton Road, Maidstone, on Sunday, April 19. These will commence at 11.30 a.m., and a charge of 6d. will be made for admission.

**THE AIRCRAFT CLUB**, Harrogate, have instituted a "Glider Rigging" Competition, for which a small Cup has been presented. This will take the form of rigging a glider by a team of any number of members of each club, starting from the glider being properly packed for road

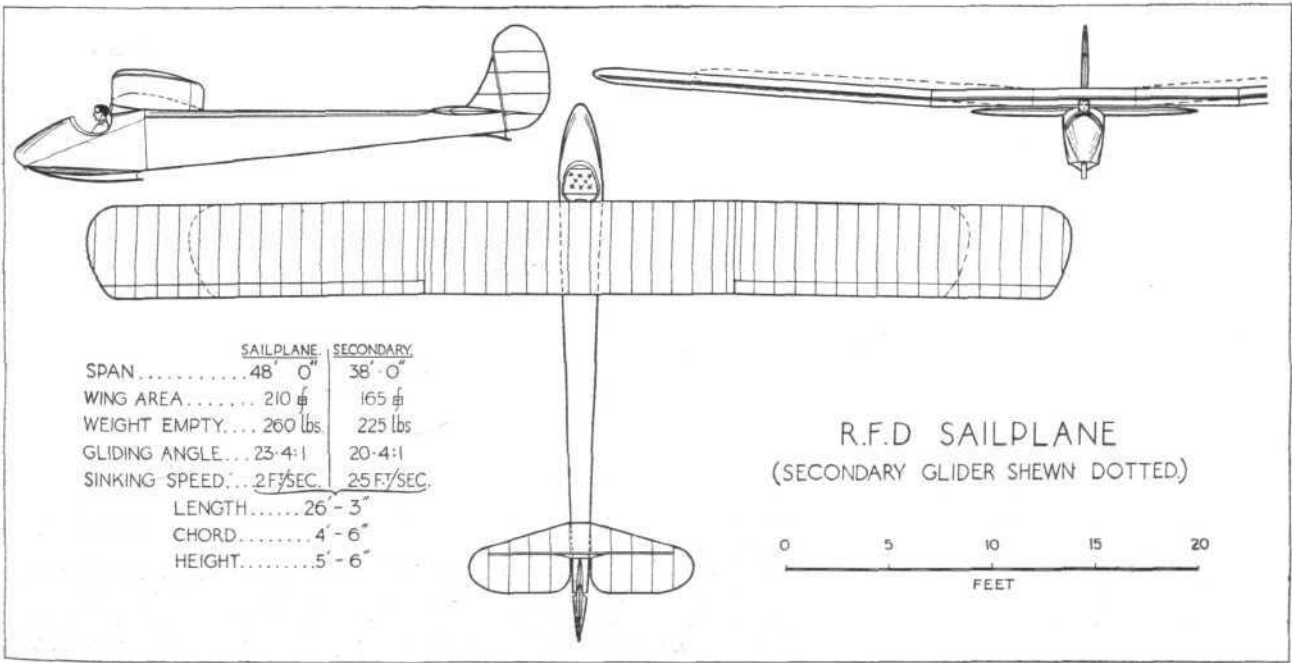
transport. The total time taken in rigging will be multiplied by the number of members in the team ; each machine will be inspected and any fault found will be indicated to the captain of the team responsible and his team will be allowed to correct the fault, but this will be timed and the time multiplied by the number of men working will be doubled and added to the figure previously obtained. The winning club must make a correct report of its methods, and details of special fittings must be published in the Aeronautical Press for the benefit of the movement. The next competition for the Aggregate Distance Cup presented by the club will be held in Niddersdale above Pateley Bridge, on Sunday, April 19, starting at 1.30 p.m.

**ASSOCIATION OF NORTHERN GLIDING CLUBS.**—The A.N.G.C. at their meeting on Saturday, March 28, decided to ask the British Gliding Association for recognition as the association's northern section. This was the unanimous decision of the members of the Leeds, Bradford, Ilkley and Harrogate clubs. Mr. Waplington, secretary of the B.G.A., was present and he said that his association was already considering dividing Great Britain and Northern Ireland into sections for the purpose of forming area organisations.

**GLIDING in the North.**—A two-day meeting was held on March 28 and 29, at Rivington-Pike, near Bolton. This was organised by the Bolton Light Aeroplane and Gliding Club and demonstrations were given by Herr Magersuppe, who is instructor to the Scarborough Gliding Club. Not only were Bolton club members present but also those of the Scarborough, Manchester, Accrington and Preston clubs, all of whom brought their gliders with them.

**GLIDING AT BROOKLANDS.**—Mr. Lowe Wylde gave a demonstration of towed gliding at Brooklands on Easter Monday, after the finish of the motor car racing, but when attempting to dive under the bridge he apparently fouled one side and damaged the glider. He himself, however, was unhurt.

**A GLIDING CLUB for Blackpool.**—After a recent demonstration of auto-towed gliding at Blackpool, it was decided to form an "auto-towing glider school" in the South Manchester district. The founder members and instructors of the proposed school will be fully trained by British Aircraft Ltd., the firm who has specialised in gliders for this purpose, and who gave the demonstration at Blackpool. Anyone who is interested in this scheme, whether they are pupils wishing to take their first instruction or power driven aircraft pilots desirous of obtaining an insight into gliding, and who wish to obtain shares in the management, should write for further particulars to G. Moore, 10, Crofton Street, Rusholme, Manchester. It should be noted that members of the South Manchester Aircraft Club which is in formation will be admitted at special low rates.



The R.F.D. Sailplane has been designed by Mr. R. P. Bewsher and has a wide and a narrow centre section, so that interchanging them produces either a sailplane or a secondary glider.

# AIR TRANSPORT

## SPECIALISING AT LAST!

The Air Ministry has recently drawn up Specifications for Air Mail Machines, the Conditions to be fulfilled being briefly: Range, 1,000 Miles at Cruising Speed of 150 m.p.h., and Weight of Air Mail Load, 1,000 lb.

**A**S long ago as September, 1928, FLIGHT began to plead for specialised classification of commercial aircraft, pointing out that a machine used indiscriminately for carrying passengers, goods and mails could not possibly be the most efficient for all purposes. In our Editorial Comment, on September 6, 1928, we said, under the heading: "The Parting of the Ways": "The time has come when we must design for specific purposes. An aircraft originally designed for passenger carrying . . . is not, even with its chairs removed, likely to be the most economical freight carrier which it is possible to produce. . . . On the other hand, a machine originally designed for carrying freight would not be expected to have the comfort, even if converted, of one designed for passenger work. . . . A mail machine, for example, could probably be quite a small single-engined affair requiring no great internal accommodation in the matter of size, mails being fairly heavy for their bulk. Consequently, one would not design a mail-carrier with a very large fuselage. . . . The point we wish to make is that it is wrong policy to attempt to design any one type of machine which may, after a fashion, but only after a fashion, serve for a variety of purposes. The time has come, and indeed is long overdue, when we should try to do better than that, and design specifically for one particular kind of work and that only."

Since that time FLIGHT has continually advocated the policy of specialised design, and not long ago we published in THE AIRCRAFT ENGINEER (Monthly Technical Supplement to FLIGHT) a series of articles by Mr. Frank Radcliffe, of "Glosser's" Technical Staff, entitled "Technical Aspects of the Air Mail." Mr. Radcliffe came to the conclusion that a very material increase in performance can be obtained by careful design, but did not overlook the difficulties. Like many others, Mr. Radcliffe turned his attention to the single-engined machine, believing that type to lend itself best to really efficient aerodynamic design. On the other hand, Major Green, chief engineer of the Armstrong-Whitworth and Armstrong-Siddeley concerns, is on record as having stated that the multi-engine aircraft could be as efficient as the single-engined. As the Armstrong-Whitworth firm is known to have under construction a large four-engined monoplane passenger machine, one may assume that Major Green spoke from definite knowledge, probably based upon wind-tunnel results of model tests. It is probably significant that, in specifications for air mail 'planes recently drafted by the Air Ministry, designers are left a free hand in the choice of the number of power units. The very fact that the single-engined type is, apparently, not barred seems to indicate a change in policy, or at any rate a willingness to consider the claims of the single-engined type.

The specification which has been drawn up will, one presumes, be circulated to aircraft constructors, and tenders asked for. We have not the space here to publish the specification in full, but we believe that in the following necessarily brief summary the main points have been brought out.

### The Specification.

Following are the more important points in the specification for an air mail 'plane: The machine to be a landplane, the

main requirements being reliability, speed, and ease of maintenance. The machine must have tankage for a range of 1,000 miles at a still-air cruising speed of 150 m.p.h., and the landing speed must not exceed 60 m.p.h. The mail load, apart from weight of fuel and crew, to be 1,000 lb. As a safety measure the main fuel tank must be capable of jettisoning its contents. Gravity feed is to be used.

The machine must have a good degree of positive stability around all axes, and tail trimming gear to ensure ability to fly horizontally without the aid of the pilot at any speed within the speed range. The aircraft must be adequately controllable at all speeds, and the aileron control to be adequate and able to stop incipient spin when the machine is stalled. Approved slots are to be fitted. The ailerons must be so designed that they produce a minimum of yaw when operated. In addition to controllability, the manoeuvrability must be good, and the machine must not be tiring to fly.

The aircraft is to be of all-metal construction, with the exception of the covering, which may be fabric. Where steel is used in the construction it should, as far as practicable, be of the stainless variety. Anodic and cadmium treatments to be used in their appropriate places.

The crew of the machine is to consist of 2, and the equipment is to include wireless, signals, equipment for night and day flying over the sea, and, of course, all the usual instruments, etc. Dual control to be provided, with chief pilot on left-hand side. The view from the cockpit must be good, and entrance to be provided elsewhere than through the mail compartment. In the mail compartment a trap door must be provided in the floor for dropping and picking up mails, but it is not quite clear whether this stipulation refers to ordinary loading and unloading on the ground, or whether there is some idea of the possibility of dropping mail bags in flight. On the assumption that 12½ lb. of mails occupy 1 cu. ft., the mail compartment will have to have a capacity of 80 cu. ft.

It appears that designers are left a free hand in the choice of the number of engine units, but the specification stipulates that in a multi-engined aircraft the machine must be capable of flying with one engine stopped at 5,000 ft. There is evidence that the use of air-cooled engines will not be insisted upon, as the specification calls for a reserve of water if required. This is taken to refer to spare water for water-cooled engines working in tropical climates, where the evaporation may be expected to be considerable.

The undercarriage is to be fitted with wheel brakes, and a tail wheel is called for. The track of the undercarriage is to be wide enough to make the machine stable when taxiing in a cross-wind of 20 m.p.h.

It will be seen that the aircraft designer will have some very pretty problems to solve. A machine which carries fuel for 1,000 miles and a pay load of 1,000 lb. at a cruising speed of 150 m.p.h., will tax the ingenuity of designers, and even if no machine is actually produced which complies with all the requirements, the very attempt to design such a machine should teach valuable lessons. It cannot be said that we have hitherto made any serious attempt to produce a really efficient commercial aircraft. The new air mail plane specification aims high, and should result in some extremely interesting machines being produced.

## SUMMER SERVICES IN GERMANY

**A** CONSIDERABLY increased programme in the European airways net was announced recently by the Deutsche Luft Hansa, some of which was due to start on March 1 and April 1 last. The Luft Hansa is extending its field of activities by reopening six routes, which means that the daily mileage will be increased from 8,000 miles to approximately 12,000 miles. With the introduction of further traffic improvements on April 1, Luft Hansa aeroplanes serve 24 German and 20

foreign air ports—instead of 18 and 11, respectively—along 26 flying routes.

As can be seen from the increase in the number of foreign airports, the alteration in the flying programme means primarily a vast improvement in the facilities for aerial communication between Germany and other countries. On the one hand, the increase in the mileage covered daily makes it possible to extend into the neighbouring countries the lines that were previously confined to Germany, and, on



the other hand, the establishment of important connections with foreign air lines brings about a considerable growth in international traffic.

Thus, for instance, the Hamburg-Stuttgart line is extended to Zürich; the Vienna-Munich line to Geneva; and the Essen-Mannheim line to Amsterdam and Basle. Amongst others, the Vienna-Budapest, Munich-Essen, and Mannheim-Munich lines, all of which are much frequented, are put into operation once again.

Of special interest is the intensification of German and Italian co-operation in air traffic. A short while ago Germany, Austria, and Italy entered into certain agreements designed to bring about a considerable extension of the joint collaboration on the routes to Italy. These arrangements were due to come into operation on April 1, when the Munich-Milan routes—both the express traffic route and the route via Innsbruck, Bozen and Trent were to be reopened and (a new feature) extended, in co-operation with the Italian Avio Linee Co., as far as Rome and Berlin. German aeroplanes thus fly for the first time as far as Rome, whilst, on the German side, the Italians will have a half share in the service between Munich and Berlin.

The Berlin-Rome line, which will include a stop at Munich during the spring, but which in the summer will be a non-stop run from Rome to Berlin (taking about 13 hours), should very shortly become of the greatest importance to international traffic; for it will mean a great cutting down of time in the through traffic, especially in mail traffic.

Taking it as a whole, the spring programme, which represents the transition stage between the winter service and the extensive summer schedule, should meet the traffic requirements of the moment. There still exists, it is true, a certain amount of discontinuity, the limited means at the Luft Hansa company's disposal having made it so far impossible

to have the important Berlin-Stuttgart-Zürich line, and the busy Breslau-Prague-Munich line in operation by April, and these routes will not be able to be worked until May.

Simultaneously with the alteration in the flying programme the Deutsche Luft Hansa is introducing further fare-reductions all round. The company is lowering its tariffs in conformity with the changes in the economic situation, in the hope that it will thereby gain for the aeroplane new circles of adherents. A few examples will here be cited to illustrate the extent of the price-reductions. From March 1 onwards the fare from Berlin to Cologne will be 65 RM. (as against 75 RM. in the spring of 1930), from Berlin to Paris 140 RM. (155 RM.), from Berlin to London 170 RM. (190 RM.), from Halle/Leipzig to Cologne 43 RM. (56 RM.), from Breslau to Cologne 78 RM. (100 RM.), from Frankfurt to Zürich 48 RM. (60 RM.), from Stuttgart to Zürich 25 RM. (35 RM.) and from Königsberg to Berlin 70 RM. (80 RM.). In all cases the fares approach closely the second-class fare on the railway, with the added advantage that the duration of the flight is in many cases considerably less than half that of the railway journey.

Another feature being introduced by Luft Hansa consists of an "air omnibus" service to be started at the beginning of May between Cologne and Frankfurt. The aeroplanes will leave both towns at intervals of an hour. The journey will also last an hour, as compared with the 4½ hours required by the Rheingold express, the fastest train connecting the two towns. The single fare is to be about 23s.

In January, 1931, the Deutsche Luft Hansa was able to record a very gratifying increase in the traffic over that of the previous year. It is to be hoped that the traffic-improvements and tariff-reductions introduced on March 1 will convert the incipient improvement into a permanent one.

## AIRPORT NEWS

### CROYDON WEEKLY NOTES

**I**N spite of the inclement weather, there has been great activity for the whole week.

On Monday we had a visit from the Ford Tri-motor monoplane, the machine recently acquired by Prince Bibesco, for use in connection with his work as President of the Federation Aeronautica Internationale. Later in the week the same machine left for Paris.

On the same day the Clark Cheetah landed. This is the first time this aircraft has visited Croydon, and when approaching the aerodrome was taken for a Widgeon.

On Wednesday, Capt. C. D. Barnard commenced his tour of the country with his circus, comprised of the famous old Spider, an Autogiro, and a Spartan three-seater. It looked a very curious combination taking off. It is understood that our old friend Mr. Eskell has had quite a lot to do with the organisation.

A new type of machine, owned by the K.L.M. Company of Holland, arrived during the afternoon. I understand it is a type created and built by this company. It is known as the Jumbo. She is a biplane, fitted with a Bristol Jupiter engine, and reminds one very much of the old Vickers Vulcan, having a very large oval-shaped fuselage and a stub nose; she has been built as a freight-carrier, but is by no means slow. Her speed compares favourably with the more conventional types.

Thursday saw the commencement of the Easter rush, but the day ended tragically, and cast a gloom over the whole aerodrome. Mr. E. Smith, well known as a pilot of Surrey Flying Services, was killed instantaneously when he and his companion, Mr. C. M. Brown, who was the owner of the machine, crashed in the centre of some cross-roads in Wallington. The machine was an Avro Avian, G-EBZD, which originally belonged to Airways Publications, Ltd., but was sold to Mr. Brown some time ago. It had not been in the air for a month or two, and was out on its first flight again when the crash occurred. "Smithy," as he was popularly known, had been flying with Surrey Flying Services for many years, and everyone deplores his tragic end. I doubt if any other pilot has carried more passengers on joy-rides than he. On a normal week-end in summer he would be up and down as fast as he could get his passengers in and out, from about 10 a.m. until dusk. Maj. Cooper, Air Ministry Inspector of Accidents, was called to the scene of the crash, and after making a preliminary inspection on the spot,

the crashed aircraft was removed to a special hangar, where he continued his investigations until nearly 3 a.m.

The Easter services have broken all records; machines have been leaving practically every hour, full to capacity. Extraordinarily fine shows were put up on Friday. The weather was about as bad as it could possibly be, but all the usual and extra services were run without a hitch. It is very creditable to pilots and all concerned that such a fine show should have been made in such adverse conditions. These performances do not get placed before the public, but had things been the reverse there would, more than likely, have been an outcry. Why cannot this sort of thing be given publicity as well as the other side?

When the weather improved on Saturday, private owners turned out in their dozens, and all day long were making treks for the Continent. Sunday and Easter Monday were again bad, and rather marred what should have been great days at Croydon. On a fine Bank Holiday Croydon is a very great attraction, and the public enclosure is usually a seething mass of picnic-makers.

The first Australian air mail left on Saturday amid scenes of great enthusiasm. Mr. Robinson, the pilot, was in a cheery mood. It is rumoured that he took this pioneer trip by sheer influence. There will be two experimental services each way before any definite decision regarding a regular service is made.

What a wonderful flight of Lieut.-Commander Glen Kidston, R.N. He certainly has achieved his object of showing how quickly to get to the Cape, but how much mail could he have carried to the Cape—especially on that hop from Cairo to Malakal? However, it was a great flight, and we at Croydon heartily congratulate him; Civil Aviation needs all the assistance she can get from such men as Glen Kidston.

The Deutsche Luft Hansa Co.'s night air mail service commenced again on April 2.

The Rollason Aviation Co. appear to be making a real business of joy-riding. They have just acquired two new Avro 504's.

Henderson Aviation Bureau, Ltd., have been busy with special charter trips to Brussels, Paris, etc. This company have just acquired a new Puss Moth.

The traffic figures for the week are: passengers, 755; freight, 56½ tons.

P. B.



## A DRESS REHEARSAL

**B**Y way of a test flight of their Vickers-Napier machine, Captain Stack and Mr. Chaplin left Brooklands on the morning of April 8 on a flight to Berlin and back. As already recorded in FLIGHT Captain Stack and Mr. Chaplin are preparing for a record flight to Australia, and they adopted this very sensible way of first giving their machine, engine and equipment a thorough test.

The machine used is a Vickers "Vivid,"



fitted with Napier "Lion" engine, and a very complete equipment of instruments, etc., is carried. The refuelling system includes a special pump, by means of which the crew can, as shown in one of our photographs, fill the tanks from drums on the ground. The capacity of the pump is such that the whole fuel supply, some 240 gallons, can be pumped into the tank in about half an hour. Thus, a minimum of time should be wasted on the Australia flight in refuelling at the intermediate stops, a not unimportant consideration on a flight of this nature.

It is believed that as soon as Stack and Chaplin return from Berlin, and if everything has been found to be in order, they will make a start for their record attempt to Australia.





# THE "HUSUN" TRACK COMPUTER

A new instrument for ascertaining the "Course made good" from three wireless (or other) bearings of a fixed station. The instrument is made by Henry Hughes & Sons, and obtainable from Smith's Aircraft Instruments, Ltd., 185, Great Portland Street, London, W.1.

IF the three bearings are drawn on paper from the fixed station, and any "course made good," or "track" as it will be called, is drawn cutting the three lines of bearing, then the ratio of the two parts of the track intercepted between the lines of bearing depends on the direction of the track and, *vice versa*, the direction of the track will be determined by the ratio of the intercepts when the lines of bearing are known.

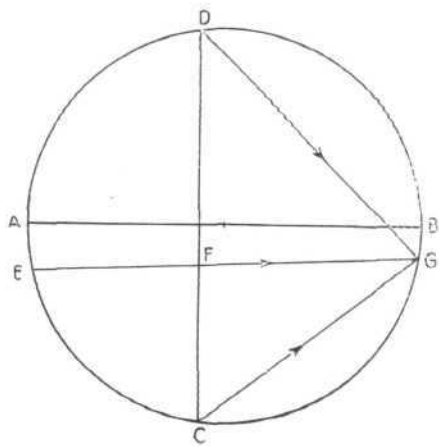
Consequently, when three bearings of a station are taken at known times, the three bearings together with the ratio of the time intervals between the bearing suffice to determine the track.

### Geometrical Construction

Draw a circle and its diameter AB. From A mark off arcs AC, AD equal to the sum of the intervals of bearing and draw the chord CD. Then CD is perpendicular to AB. From A set off an arc AE equal to the difference of the intervals of bearing, downwards if negative upwards if positive. Divide CD at F so that  $CF/CD =$  the ratio of the time intervals between the bearings. Join EF and produce to cut circle at G; join CG, DG.

Then, assuming that the aircraft is proceeding along the chord CFD and the station is at G, the lines CG FG DG will represent the bearings. It is now only necessary to add the angle GFD to the middle bearing FG to obtain the track CD.

This can be done in various ways, but for the present instrument the method preferred is to run a square along EFG, perpendicular to that line till it cuts the centre of the main circle, and to set a loose circle by the square so that the



The Geometrical Construction upon which the "Husun" Track Computer is based.

square reads the middle bearing, and then to read off the direction CD at B. The actual construction only differs from that described above by being inverted from left to right to obtain more convenient manipulation of the instrument.

### The Actual Instrument

The type Av. 916 "Husun" track computer is designed to show the actual direction of motion or track of an aircraft from three observations of the bearings of the same fixed object, utilising also the times of observation. There are no restrictions, such as observing at equal intervals of time or equal intervals of bearings. The bearings may be visual bearings by compass of any fixed object, or wireless bearings of a fixed wireless station.

On the back of the instrument is a celluloid disc on which the bearings and times can be written down in pencil and the necessary differences and ratios found.

For example, let a fixed wireless station at the following times have the bearings shown below:—

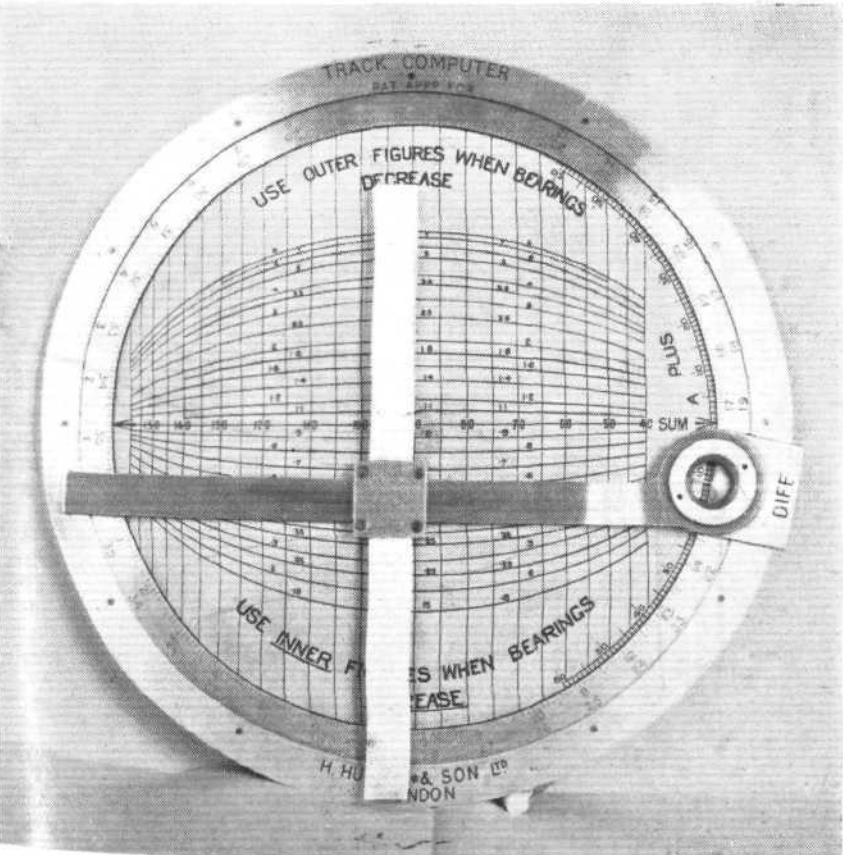
	Diff.	Bearings	Time h. m.	Diff.	Ratio
Sum 83°	—	40°	16 51	—	—
	..	35°	—	18m	—
		75° inc.	17 9	—	0.67
Diff. — 13°	..	48°	—	27m	—
		123°	17 36	—	—

As seen, the bearing intervals are first formed, giving 35° and 48° respectively, and these have as sum 83° and difference = 13°, the latter figure being obtained by subtracting the second interval from the first, paying attention to sign. The time differences are 18 m. and 27 m. and their ratio, found by dividing the first interval of time by the second, is 0.67.

Turning the instrument over, the slider engraved DIFF is moved till the index blade stands over the 13° mark on the MINUS side of the etched arc of the main plate of the instrument.

On the main plate of the instrument are etched a series of chords with intersecting ellipses; the chords all cut a horizontal diameter and are figured from 40 to 150. The ellipses are also figured in smaller figures for the time ratios ranging from 0.15 to 8 at convenient intervals.

The straight edge, pivoted to the DIFF slide, is to be swung till its upper edge cuts the point corresponding to the intersection of the chord and ellipse representing the SUM of the bearing intervals and the ratio of the time intervals, in this case 83° and 0.67 respectively. This is more conveniently done by the left thumb. Holding the pivoted arm in



THE "HUSUN" TRACK COMPUTER: Diameter 7 in., thickness about 1/2 in., and weight a few ounces. On the back is a celluloid disc on which bearings and times can be written down.

place by the left thumb, move the cross slide along till its edge cuts the centre of the main plate, engraved 90 on the chord or sum scale, and rotate the divided circle lying just above the main plate till the middle bearing is read against the same edge of the cross slide on the nearer or lower side of the main plate. Here it is necessary to use the inner figures of the double divided circle when the bearings increased with time and the outer figures when they decreased with time. In order to be reminded of this, the necessary note has been etched on the main plate of the instrument.

The track can now be read off on the left of the instrument by means of the arrow on the left end of the main diameter against the divided circle, in this case 348° using the same inner (or outer) figures as were used in setting the circle.

If the wireless bearings available were taken from the fixed station the procedure is exactly the same until the final operation of reading the track. The track in that case is read from the right hand arrow near the word SUM and with AA marked on each side of it.

In using the instrument, it is of great advantage to put down the bearings and times, etc., in a standard form similar to that shown above.

The bearings and times are written down in two columns, the bearings on the left and times on the right. Next write down the intervals of both bearings and times working out-

wards from the first two columns. On the left of the bearing intervals now write their sum and difference, the latter being formed by subtracting the second interval from the first, paying attention to sign. On the right of the time intervals write their ratio formed by dividing the first interval by the second, using two significant figures. Finally the middle bearing is underlined and marked "inc" or "dec" according to whether the bearings increased or decreased with time. Skilled navigators will appreciate the advantages of Track determination when flying in or over fog or clouds, as only one extra timed fix is required to find the ground speed; any convenient one of the timed bearings used in finding the track can be combined with the extra fix to give the distance run in the interval on the known track which immediately gives the ground speed; by combining the Track and Ground Speed with the Course and Air Speed, the velocity and direction of the wind can be immediately found.

To obtain full benefit from the above method, compass courses should be steered and the necessary alterations made as required. Although the track can now always be ascertained, the knowledge of the compass course from a previous fix, which can be combined with the Track found after losing sight of the earth to obtain or check the wind, enables navigation to be carried out with confidence in the result.

## TALES OF THE INTERNATIONAL CATERPILLAR CLUB

By CHARLES DIXON

THE modern parachute of accepted design is playing an important part in military and civil aviation, not only by saving valuable lives, but by making possible practical research and experiment of the most dangerous order under flying conditions. It has long since passed from the experimental stage as an aircraft equipment into the stage of standardisation.

Every year since the Royal Air Force adopted the British Irvin Air Chute about five years ago, a number of lives have been saved, and the present year promises to set up a record, for at the moment of writing ten R.A.F. pilots have been added to the list.

Each airman whose life is saved with an Irvin Air Chute automatically becomes a member of the International Caterpillar Club, an organisation created by the Irvin Air Chute Company exclusively for these airmen. There are no fees or rules governing the Club. Each member is presented by the Company with a gold caterpillar tie pin, and his name included in the records of the Club.

Collectively the experiences of these caterpillars add to our knowledge of the causes of air accidents of every nature, and of how the airmen tend to react in face of swift danger. For these reasons the publication of their stories, as they bear upon the technical issues rather than the human issues, may be considered by our readers not only of exceptional interest but also of great value.

### A Padre Caterpillar

Amongst the two hundred and seventy members of the club there is one Padre. He is Squadron Leader K. C. H. Warner, Chaplain in the R.A.F. On January 23 last year he was being flown from Abu Sueir to Cairo, a distance of approximately 70 miles across desert, in a D.H.9a, with a Liberty engine, piloted by Flight-Lieut. V. J. Somerset-Thomas, R.A.F. They had been flying in a very damp atmosphere for half-an-hour, which brought them to a point fifteen miles from the nearest civilisation, when the crank-shaft of the Liberty engine broke.

The pilot immediately throttled back and switched off the engine but the vibration was still so excessive that it broke the port engine bearer, and the Liberty began to fly to pieces. Almost at once the machine commenced an uncontrollable starboard spin, which the pilot could not affect after several seconds of effort.

He therefore decided that he and the Padre had better jump with their Irvin air chutes. He released his safety belt, stood up, indicated to the Padre exactly what was required of him, and then dived over the port side by way of example. The Irvin opened promptly after he had allowed himself to fall several feet, and pulled him upright. The Padre did not hesitate about the necessary action. He also released his belt, jumped up, lifted one leg to the top of the cockpit and flung himself out to starboard. His only fault, perhaps, was in releasing his parachute rather too quickly.

From the original account the writer judges that he pulled the ring almost as he left the cockpit, which, of course,

is too soon. One should count about three (if there is time). However, there was a thirty-mile per hour headwind, which helped to fling the chute clear of the tail unit, although the pilot chute feature of the Irvin comes into effective play in such conditions by dragging out the chute at a tangent to the airman's body, instead of letting it open vertically above him. Like most airman on such occasions, the Padre was surprised at his sense of security and comfort when the chute opened and gently floated him to the desert.

He saw the abandoned D.H.9a dive into the desert, and then his own landing became imminent. He acted correctly in not resisting the impact, which was so slight that he hardly noticed it, although he alighted on his left shoulder, after the manner of a fall at Rugger football. Owing to the force of the ground wind he was dragged a considerable distance until Flight-Lieut. Somerset-Thomas, who had landed safely a short distance away, ran to his assistance. Both were none the worse for their unexpected adventure.

### Pitched Out

When one ranges over the records of Caterpillar members, it is remarkable to find how many of them were flung out of their cockpits through breaking safety belts or other reasons. The late Flying Officer Vickers O. Eyre, R.A.F., had the startling experience of being shot out of his Siskin IV when flying at 2,000 ft. It was not a question of a breaking belt in his case.

He dropped his flying map, and bent forward with his belt undone to recover the map from the floor. Apparently he accidentally pushed the joy-stick forward, for the Siskin suddenly dived round on to its back, and Eyre found himself floating on air facing skywards with his feet slightly higher than his head. He felt no sensation of falling, and the only indication of movement to him was the feeling of pressure behind him.

It was not a moment before he thought of his Irvin Air Chute, but although he could move his hands easily, to find the ring he could not bend his head to guide his hands, which may have been due to the stiffness of his flying suit or to the fact that he was beginning to turn the usual long somersaults.

Before he had ceased pulling on the ring the silk canopy whisked and rustled past his feet and the opening jerk which pulled him vertical did not affect him. The altitude then was 1,500 ft., and his descent was so slow that he thought he was stationary. There was no sign of the abandoned Siskin, and it worried him to think of its possible danger to people in its path.

As he approached the earth, his rate of descent became visible, and he turned to face the direction of his descent. A large tree in the centre of a field was a threatening obstruction until he managed to sideslip clear, to land without shock or injury. Then a farmer allayed his concern for others by riding up to inform him that the Siskin had crashed a mile away amidst trees without hurting anyone.

(To be continued)



# AIRISMS FROM THE FOUR WINDS

## England—Australia Flights.

MR. C. W. A. SCOTT, who, as previously reported in FLIGHT, hoped to improve upon the time for a solo flight from England to Australia, started on his attempt from Lympne on April 1. Mr. Scott, who is a pilot of Queensland and Northern Territory Aerial Services ("Qantas"), is flying a D.H. Moth, fitted with a Gipsy II engine, with sufficient petrol (101 gal.) for 2,000 miles. The flight started at dawn and finished for the day at Belgrade, after a non-stop run. The next day he left for Aleppo landing that night 25 miles from there, and completing the journey next morning. He set out again at 8 a.m. for Baghdad and by April 5 he had reached Karachi. From here he made rapid progress. Calcutta was reached on April 6—half a day behind his own schedule, but six hours ahead of Kingsford Smith's record up to this point. He left Calcutta for Rangoon at 2.30 a.m., April 7, arriving at Rangoon at 11 a.m., and after refuelling set out for Victoria Point. He arrived at Singapore early on April 8 and left 40 mins. later for Palambang.

Another flight to Australia in progress is being made by Mr. H. F. Broadbent, a young Australian from Sydney, and member of the N.S.W. Aero Club. He left Hanworth on March 29 in a Gipsy II Blackburn "Bluebird IV," but not with any intention of breaking records. He reached Constantinople on April 1.

## New Zealand—Australia Flight Abandoned.

MR. FRANCIS CHICHESTER, who was attempting a flight from New Zealand to Australia in a Gipsy Moth seaplane, after being held up at Norfolk Island, flew thence to Lord Howe Island on April 1. Unfortunately, however, his machine capsized in the lagoon the following day, and it is reported that he has abandoned the attempt.

## Mrs. Montagu's Tour

THE HON MRS. EDWIN MONTAGU—the widow of the former Liberal Secretary of State for India—who, accompanied by her pilot, Mr. Rupert Belville, left Heston on March 27 in her "Gipsy Moth" on a tour to Persia and Soviet Russia, reached Budapest on April 1. On April 5, when flying to Sofia, they made a forced landing at Nisch, Jugo Slavia, but were able to proceed later. The flight was continued on April 7 from Sofia to Constantinople.

## Miss Reynolds' African Flight.

MISS DELPHINE REYNOLDS, who is carrying out a "survey" flight along the west coast of Africa to Cape Town in a Blackburn "Bluebird" (Gipsy III) seaplane, in company with Flt.-Lt. W. G. Pudney, flew from Bathurst to Dakar and return, carrying mails, on April 2. Next day a two-hours' trip to Bulama was made, and on April 4 they flew to Sierra Leone.

## French Air Minister's Flight.

M. DUMESNIL, the French Air Minister, left Le Bourget at 1.20 a.m., on April 5, in a Breguet with 600 h.p. Hispano Suiza, piloted by Capt. Costes, for a tour of the French African colonies. The machine landed at Colomb Bechar,

a military outpost on the edge of the Sahar 1,700 miles away, at 5.37 p.m. next day, after a non-stop flight.

## The Prime Minister Flies Home

ON April 1 Mr. MacDonald, the Prime Minister, flew in a R.A.F. aeroplane (Fairey III F), piloted by Flight-Lieut. H. W. Heslop, of No. 24 (Communications) Squadron, from Hendon to his home at Lossiemouth. Another machine carried members of the Prime Minister's staff. The distance is 450 miles, and the party were in the air only three hours 20 minutes, giving an average speed of 135 m.p.h.

## Aeroplanes at the Managua Earthquake

AFTER the destruction of Managua, the capital of Nicaragua, by an earthquake, 13 aeroplanes from the U.S. Carrier *Lexington* flew to the scene of the disaster, 350 miles away, carrying doctors and supplies.

## H.M.S. "Glorious" in Collision

THE aircraft carrier *Glorious* collided in a fog with the French liner *Florida*, about 60 miles east of Gibraltar on April 2. At the time 21 of the aeroplanes stationed on the carrier were in the air. As they were unable to land on the deck after the accident, they were ordered to fly to Malaga aerodrome. Seventeen of them arrived there safely, but four were obliged to come down in the sea, presumably from shortage of petrol. All the pilots were rescued.

The flights belonging to the *Glorious* are Nos. 405, 406, and 408 Fleet Fighter Flights, using the "Flycatcher"; Nos. 441 and 447, Fleet Spotter Reconnaissance Flights using the Fairey III F; and Nos. 461 and 462 Fleet Torpedo Bomber Flights using the "Ripon."

## The Cierva Autogiro in the U.S.A.

THE Committee of the National Aeronautic Association has awarded the Collier Trophy for "the greatest achievement in aviation in America, the value of which is demonstrated by actual use in the preceding year," to Dr. Harold F. Pitcairn and his associates for the development and application of the Autogiro airplane.

## British Engines for Finland

BRITISH aircraft engine manufacturers have secured the Finnish Government's order for 13 Armstrong-Siddeley Jaguar Major engines for the Finnish Air Force. The other tenders submitted included offers from American and French firms.

## Breakdown of the African Air Mail

OWING to the failure of the flying-boats, no air mail from London was received in Uganda for week ending March 28. An aeroplane from Khartoum brought mail from London to Entebbe on April 1, and left later with the mail for London.

## China to Germany in Four Days

THE new air service, which brings Germany within four days of Eastern China, was inaugurated on April 1. The route of the new service includes stops at Peking, Mukden, Manchuli, and Irkutsk, where the 'planes of the Soviet Air Service will connect and continue the route as far as Moscow.



**U.S. SPEED KING IN EUROPE:** Capt. Frank M. Hawkes, the well-known American cross-country pilot, and his "mystery" monoplane, the Texaco 13 Travel Air, are now in Europe, record hunting. On April 6 he flew from Cherbourg to Le Bourget in 54 minutes, at a speed of 228 m.p.h.—a record for the trip.

# AIR MINISTRY NOTICES

## NAVIGATIONAL WARNINGS

### Abbeville: Equi-Signal Aural Beacon

It is hereby notified:—

1. A radio beacon of the equi-signal aural type has been installed at Abbeville, as a navigational aid to aircraft flying on the Croydon-Paris route. Details of the beacon are as follow:—

Name of Beacon.—Abbeville.

Position.—Lat. 50°08'20"N. Long. 01°49'30"E. of Greenwich.  
(Lat. 55°70'99"N. Long. 00°56'91"W. of Paris.)

Frequency (Wavelength).—311.2 kilocycles (964 metres).

Interlocking Signals.—"F" and "L."

Normal range.—80 miles.

Hours of Service.—0800—1700 G.M.T.

Remarks.—The morse signal F (— · — ·) is transmitted by the beacon over a quadrant of a circle extending from 252° to 342°T, and over the reciprocal quadrant from 72° to 162°T.

The morse signal L (— — — ·) is transmitted over the supplementary quadrants extending from 342° to 72°T, and from 162° to 252°T, respectively.

The great circle course of 162° from Dover via Abbeville to Le Bourget aerodrome midway between these quadrants thus forms an "equi-signal line," along which the signals F and L are received with equal strength. The two signals then blend together or "interlock" as shown below.



and form a long steady note thus: —————

2. When flying between Dover and Abbeville, deviation to the eastward of the equi-signal line will cause the letter L to be received with greater



strength than the letter F, and hence the signal actually received will reveal the letter L superimposed on an indefinite background. As the deviation increases, the letter L will become more prominent and more defined. Deviation to the westward of the equi-signal line will cause the letter F to be received in a similar manner. When flying between Abbeville and Le Bourget the effect will be similar but opposite, that is to say, deviation to the eastward will cause the letter F to be heard and deviation to the westward the letter L.

3. Pilots utilising this method of direction finding by wireless telegraphy should therefore so navigate their aircraft that a long steady note only is received. They will then be following the equi-signal line between Dover and Le Bourget.

4. Pilots should note that when proceeding towards Abbeville either from Dover or from Le Bourget, the letter F will indicate deviation to the right (starboard) and the letter L deviation to the left (port). When proceeding from Abbeville either towards Dover or towards Le Bourget, the rule is reversed, viz., the letter F will indicate deviation to the left (port) and the letter L deviation to the right (starboard). With practice, the amount of deviation can be estimated according to the strength with which either the letter F or L, as the case may be, is received.

5. In this Notice, the expression "deviation" means deviation with respect to the equi-signal line, and has no connection with the deviations of the compass.

6. The accompanying sketch shows the orientation of the equi-signal line and the quadrants in which the letters F and L are transmitted.  
(No. 4 of 1931.)

### Night Flying without Navigation Lights

1. ROYAL Air Force aircraft will be flying between 1900 and 0045 hours daily (Sundays excepted) during the period March 23 to October 30, 1931, inclusive, over an area bounded by straight lines joining Stowmarket, Tenterden, Petersfield, Newbury and Stowmarket.

2. Unless other aircraft are observed in their vicinity, the aircraft will not exhibit navigation lights when flying at certain altitudes, i.e., above 3,000 ft., with the following exceptions:

(a) Above 5,000 ft. over that portion of the above-mentioned area lying between a straight line joining Croydon and Deal and a straight line joining Croydon and Dungeness.

(b) Above 5,000 ft. over the area bounded by straight lines joining Chelmsfield, Addington, Oxted, Sevenoaks and Chelmsfield.

(c) Below 3,000 ft., on certain dates to be notified later, over the area bounded by straight lines joining Chelmsford, Southend-on-Sea, Dartford, Waltham Abbey and Chelmsford.

3. Cancellation. N/A Navigational Warning No. 1 of 1931 is hereby cancelled.

(Navigational warning No. 6 of 1931.)

## AIR MINISTRY NOTICES TO AIRCRAFT OWNERS AND GROUND ENGINEERS.

### De Havilland Aircraft: Fireproof Bulkheads

1. With reference to Notice to Aircraft Owners and Ground Engineers No. 24 of the year 1930, a number of de Havilland aircraft of the types D.H.60, D.H.60.X, D.H.60.G., D.H.61 and D.H.66 have been fitted with fireproof bulkheads constructed of 3/4 in. asbestos rivetted or bolted between 24 gauge aluminium sheet in front and 1 1/2 mm. three-pl ybehind.

2. Recent tests have shown that this bulkhead is satisfactory, and it is not necessary, therefore, to modify such bulkheads on aircraft of the above types in order to satisfy the conditions for renewal of Certificates of Airworthiness. (No. 20 of 1931.)

### Jupiter Engines: Locking Crankshaft Balancing Plugs

1. An instance has occurred where the balancing plug screwed into the periphery of the crankshaft balance weight of a Jupiter engine came out because it was not locked in position.

2. Aircraft owners and ground engineers concerned should take the first opportunity to examine such engines for the security of this plug. The examination can be made quite easily by removing one cylinder and piston.

3. The correct method for locking the balancing plug, is topeen the metal from the balance weight into the slot in the head of the plug by means of a suitable blunt chisel or punch. Any plug found unlocked should be first checked for tightness by means of a screwdriver; plugs already locked should also be checked, and if any slackness is found, must be tightened up and re-locked.

4. A note to the effect that this examination has been carried out and that any locking or re-locking necessary has been done, should be entered in each engine Log Book.

5. This notice will not apply to any "Jupiter" engine that leaves the makers' works subsequent to the date of issue of this notice.  
(No. 21 of 1931.)

### Blackburn Bluebird Mk. IV Aircraft: Top Sternpost Joint

1. Cases have occurred of the raised flange on plate NA 507, which secures the sternpost to the top longeron, bending and cracking in way of the taper pin.

2. This fitting should therefore be inspected immediately and further inspection should be carried out at frequent intervals.

3. A Modification, No. N.S. 1, which incorporates a redesigned sternpost fitting and duralumin end plugs for the longerons, has been prepared.

4. Particulars of this modification, together with the necessary parts, may be obtained from The Blackburn Aeroplane & Motor Co., Brough, E. Yorks.  
(No. 22 of 1931.)

### Examination of Applicants for Ground Engineers' Licences

1. Examination boards will sit for the purpose of examining applicants for ground engineers' licences at the following times and places:—

(a) London, on the 1st, 3rd and 4th Wednesdays in every month.

(b) Croydon, on the 2nd Wednesday in every month.

(c) Manchester, on the 1st Wednesday in July and October.

(d) Birmingham, on the 2nd Wednesday in August and 1st Wednesday in November.

(e) Bristol, on the 1st Wednesday in September and December.

2. Applications for licences should be made on the appropriate form, which is obtainable on request, and should be addressed to The Secretary, Air Ministry (D.C.A.), Gwydyr House, Whitehall, London. Applications for extensions to existing licences will also be dealt with at these boards and such applications should be sent either by letter or on the usual application form to the address given above.

3. Applications for examination at the centres named at (c), (d) and (e) of para. 1, above, can only be accepted provided that the application is received 14 days before the dates specified and provided also that the total number of applications received are within the capacity of the board. Applicants whose applications are not accepted owing to these provisions, will be given the opportunity for early examination at London or Croydon, or, alternatively, to be placed on a waiting list for the next board to be arranged in the particular place concerned.

4. Notice to Aircraft Owners and Ground Engineers No. 41 of 1930 is hereby cancelled.  
(No. 23 of 1931.)

Travemünde on April 1, with a representative of the French Air Ministry on board, for Cherbourg, where it will be officially taken over by the French authorities.

### Japanese Air Station Destroyed

THE largest military aviation establishment at Tachiarai, on the Island of Kiushim, was destroyed early on April 5 by a local hurricane, and 4 hangars and 19 aeroplanes were destroyed, while many more machines were damaged.

### Royal Geographical Society Medals

THE Royal Geographical Society, on April 1, announced that the King had approved the award of the following Royal Medal:—Patron's Medal, to Rear-Adm. R. E. Byrd, U.S.N., for his expedition to the Antarctic and his flights over both North and South Poles.

### German Flying Boat for France

THE Rohrbach-Romar triple-engined passenger flying-boat, which has been built on reparations payments, left



# THE ROYAL AIR FORCE

London Gazette, March 31, 1931.

## General Duties Branch.

Group Captain H. M. Cave-Browne-Cave, D.S.O., D.F.C., is appointed Director of Technical Development, Air Ministry, (vice) Air-Marshal F. V. Holt, C.M.G., D.S.O. (April 1).

The follg. are granted short service comms. as Pilot Officers on probation with effect from and with seny. of March 13:—J. A. Andrews, J. L. Armstrong, M. D. C. Biggie, H. Bottomley, A. R. Brantford, R. V. Bucknall, J. W. Burgess, C. N. Carpenter, W. G. A. Coulson, R. Dix, S. G. Graham, A. C. Griffiths, H. V. Horner, W. L. Houbrook, J. W. A. Hunnard, T. G. Lovell-Gregg, R. C. D. Makins, C. H. Mallinson, C. M. H. Outram, F. A. Proctor, J. B. Sims, S. J. C. Stephens, P. A. de G. Tettenborn, R. J. Twamley, H. McC. White.

L. J. H. Wilson is granted a short service comm. as a Pilot Officer on probation with effect from March 15, and with seny. of March 13. The follg. are granted short service comms. as Pilot Officers for four years on the active list with effect from and with seny. of the dates stated:—W. E. Rankin (March 2); A. C. D. Webb (March 5); J. C. S. Proud (March 16); E. A. Kayser (March 18); R. B. Lees (March 18); D. A. Cameron (March 18); A. W. S. Matheson (March 18).

The follg. Pilot Officers on probation are confirmed in rank:—R. C. Parker (Feb. 25); A. P. Glenny, W. Halmshaw, D. M. T. Macdonald, J. C. F. Peacock, W. A. Richardson, W. A. J. Satchell (March 14). The follg. Pilot Officers are promoted to rank of Flying Officer:—R. J. Parkhouse (Feb. 28); D. P. A. Boitel-Gill, C. R. Davies, L. M. Hooper, B. N. Matson, L. R. Mouatt, H. J. Wilson (March 13).

The follg. are restored to full pay from half pay:—Squadron Leader E. D. Atkinson, D.F.C., A.F.C. (March 16); Flying Officer T. C. Dickens (March 24).

Group Captain I. T. Courtney, C.B.E., is placed on half-pay list, scale A (April 1); Squadron Leader R. C. Cavell, O.B.E. (Lt.-Cdr., R.N.), is seconded for a further two years duty with R.A.F. (March 16); Flight Lt. C. Dollery, M.B.E., is placed on retired list (March 18); Flying Officer S. F.

Cole is placed on retired list at his own request (March 31); Flying Officer A. O. Moore resigns his short service comm. (April 1), the short service comm. of Pilot Officer on probation N. R. G. Hunter is terminated on cessation of duty (March 1).

## Stores Branch.

Flight Lt. F. Whilton, D.C.M., is placed on retired list on account of ill-health (March 31).

## Accountant Branch.

Flight Lt. J. J. Caiger is placed on retired list (March 31).

## RESERVE OF AIR FORCE OFFICERS

### General Duties Branch.

The follg. are granted comms. in Class AA (ii.) as Pilot Officers on probation:—K. S. Alderton, A. D. Baxter, D. Beevers, W. W. Briscoe, R. E. G. Brittain, J. R. M. Brunton, C. F. A. Cockburn, J. K. Day, T. G. Figgis, S. W. Fitt, J. G. Giddins, S. F. Godden, A. L. G. Hatrick, F. H. Hawes, W. Hill, N. M. Hone, W. F. Jennings, E. V. Knowles, N. N. McKinnon, T. H. Popley, D. M. Robertson, H. F. Ruston, F. P. B. Sanderson, S. A. Scott, G. M. E. Speedy, E. W. Spilman, F. O. Thornton, V. B. Twiss, P. E. Underwood, E. P. Young (March 16); D. N. Grice, J. N. Jefferson, P. T. Petley, J. E. Robins (March 17); J. F. Truscott (March 18); the Hon. John Grimston, J. G. Macintyre (March 19).

The follg. Pilot Officers on probation are confirmed in rank:—A. C. C. Seligman (March 17); A. J. C. Stuart (March 17); J. O. Hinks (March 20); W. E. Coope (March 21); E. Shipley (March 21); N. B. Massy (March 24); A. H. Seymour-Lucas (March 26); J. A. H. Sargeant (March 28); C. H. Barnes (March 28). The follg. Pilot Officers are promoted to rank of Flying Officer:—T. G. E. Price (Feb. 1); G. P. E. Howard (Feb. 7); H. C. Devitt (Feb. 8); J. H. Goodden (Feb. 18); G. S. Ogilvie (March 9).

Flying Officer J. V. Holman is transferred from Class C to Class A (Feb. 20); Flying Officer W. R. Bailey is transferred from Class AA (i) to Class C (March 5).

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments in the Royal Air Force are notified:—

### General Duties Branch

Wing Commander W. R. Read, M.C., D.F.C., A.F.C., to Inspector of Recruiting for duty as Inspector, 20.3.31.

Squadron Leaders: E. D. Atkinson, D.F.C., A.F.C., to No. 10 Group H.Q., Lee-on-Solent, 16.3.31. J. W. Woodhouse, D.S.O., M.C., to No. 207 Sqn., Bircham Newton, 28.3.31. A. Durston, A.F.C., to H.M.S. *Courageous* 31.3.31.

Flight Lieutenants: L. M. Elworthy, to Anti-Aircraft Co-operation Flight, Biggin Hill, 26.3.31. W. J. Seward, to No. 7 Sqn., Worthy Down, 17.3.31. A. D. Rogers, A.F.C., to No. 101 Sqn., Andover, 15.3.31. H. E. King, to R.A.F. Depot, Uxbridge, 19.3.31. C. Feather, to No. 15 Sqn., Martlesham Heath, 27.3.31. J. J. Lloyd-Williams, M.C., to H.Q., R.A.F., Middle East, Cairo, 2.3.31. F. J. Doherty, to No. 208 Sqn., Heliopolis, 14.3.31. H. M. Moody, M.C., to H.Q., Fighting Area, Uxbridge, 30.3.31. F. C. Farrington, M.C., to No. 2 Sqn., Manston, 24.3.31.

Flying Officers: C. V. Howes, to Station H.Q., Heliopolis, 2.3.31. M. G.

Parker, to Aircraft Depot, Karachi, 25.2.31. A. O. Moore, to R.A.F. Depot, Uxbridge, 18.1.31. D. C. Harrison, to Practice Camp, Sutton Bridge, 25.3.31. E. H. Bellairs, to No. 29 Sqn., North Weald, 25.3.31.

Pilot Officers: J. E. C. McClure, to No. 41 Sqn., Northolt, 14.3.31. R. C. Parker, to No. 16 Sqn., Old Sarum, 26.3.31.

### Stores Branch

Squadron Leader: A. Garrity, to H.Q., R.A.F., Middle East, Cairo, 12.3.31. Flying Officers: J. W. Hustwaite, to No. 2 Armoured Car Company, Ramleh, Transjordan, 5.3.31. J. E. R. Sowman, to R.A.F. Depot, Uxbridge, 15.3.31. A. E. Haes, to School of Balloon Training, Rolleston Camp, 1.4.31.

### Medical Branch

Flight Lieutenants: W. E. Barnes, to No. 8 Sqn., Khormaksar, Aden, 2.3.31. G. P. O'Connell, to R.A.F. Practice Camp, Catfoss, 2.4.31. G. W. McAleer, to R.A.F. Practice Camp, Sutton Bridge, 2.4.31.

Flying Officers: E. W. B. Griffiths, to R.A.F. Base, Singapore, 20.3.31. H. T. Rylance, to R.A.F. Practice Camp, North Coates Fitties, 2.4.31.

## "Ab Initio" Flying Training Courses.

The undermentioned officers have been awarded special assessments, as shown hereunder, on completion of a course of *ab initio* training at No. 2 Flying Training School.

**DISTINGUISHED PASSES**  
Pilot Officer T. W. Walker.  
" " G. A. Silyn-Roberts.  
" " R. A. McMurtrie.  
" " N. H. Thompson.

## Gordon Shephard Memorial Essay, 1930.

The Gordon Shephard Memorial Prizes for the year 1930 have been awarded by the Air Council as follows:—

1st Prize, value £30. For the essay written by Squadron-Leader R. P. M. Whitham, M.C., *p.s.a.*, Directorate of Organisation and Staff Duties, Air Ministry.

2nd Prize, value £20. For the essay written by Wing-Commander T. L. Leigh-Mallory, D.S.O., *p.s.a.*, Seconded for duty as instructor at Staff College, Camberley.

## Ancient but interesting

An official report has just been issued by the Air Ministry as Report & Memoranda No. 1357, which gives results of model tests in the American National Advisory Committee density tunnel of the Hawker "Hornbill" and the AD-1 aeroball for purpose of obtaining comparison with full-scale figures, and to data for the study of the remarkable stability of the "Hornbill" at large angles. The "Hornbill," a single-seater fighter with Rolls Royce "Condor" engine, was produced several years ago, and was remarkable for its stability at the stall, which was such that the effect of slots was extremely small. The American model test figures tally remarkably well with the flight test results of the actual machine, and a scale effect of the right sort, *i.e.*, slight increase in lift coefficient and considerable decrease in drag coefficient with increase in Reynolds Number, was observed. Some idea of the efficient design of the "Hornbill"

3rd Prize, value £10. For the essay written by Squadron-Leader R. L. Stevenson, M.B.E., No. 26 (A.C.) Squadron.

## Attachment of Foreign Officers to Royal Air Force

The following foreign officers have arrived in this country for attachment for one year to Royal Air Force units, and will proceed to the Central Flying School on April 7, and remain there until May 10: Lieutenant-Commander Sax and Lieutenant Posatchich, of the Yugo-Slav Air Service.

## THE ROYAL AIR FORCE MEMORIAL FUND

The usual meeting of the Grants Sub-Committee of the above Fund was held at Iddesleigh House, on March 31. Mr. W. S. Field was in the chair, and the other members of the committee present were: Mrs. L. M. K. Pratt Barlow, O.B.E., Air Commodore B. C. H. Drew, C.M.G., Squadron-Leader A. H. Wann. The committee considered in all eight cases, and made grants to the amount of £386.

may be formed from the fact that at the largest Reynolds Number the maximum L/D was 12.90, a value which is probably rarely attained even nowadays, let alone at the time the "Hornbill" was first produced. It is interesting to reflect that the Hawker "Fury" is a direct descendant of the "Hornbill," via the "Hawfinch."

## An Aerodrome at Cannes

As was foreshadowed in FLIGHT for March 6, a new aerodrome has now been made at Cannes, and attempts are being made to establish regular air services between Cannes and Paris. Application has been made to the municipality for a subsidy, and by way of propaganda, a machine owned by the Société des Transports Aériens Rapides, with M. Lacour, President of the Syndicat d'Initiative, and M. Alian Gerbault on board, left Cannes at 10 a.m. and arrived at Le Bourget at 3 p.m. after an excellent trip on March 31.

## MODELS

### SOCIETY OF MODEL AERONAUTICAL ENGINEERS' (S.M.A.E.).

**The Gamage Cup Competition, Wimbledon, March 28.**—A warm, summer-like morning was followed by mid-winter as the first competition of the season was flown. The wind was exceedingly strong, and many models were kept inside their boxes while prospective entrants waited for better conditions. They waited in vain, however, but the entry list, which numbered twelve, was exceedingly good. After all, it is very unattractive to fly your best or next-best model, or maybe only model, in such weather.

The wind was near N.E., and models had to be launched towards the main road, and this seems to be about the worst direction to fly in, as the models naturally drifted with the wind, and could not help getting into a nasty down-current caused by the trees somewhere half-way up the field. They flew unconcernedly into this trap, and were promptly pushed to the ground. Once high up, however, they were far less troubled, and put up something near their normal duration. The first three winners showed that it was possible to stay up for a fair time, although in good weather they, as well as everybody else, would naturally have done much better. Mr. A. T. Willis (T.M.A.C.) won the Cup with a Balsa version of his well-known high-wing monoplane. The mere fact that a Balsa model can definitely fight such a strong wind and stay up in it for over a minute ought to please the ultra-light merchants. The model rolled and yawed, and showed how disturbed the air was, even at that height. At the start of the second flight, it damaged itself beyond field-repair, but the first flight carried the Cup anyway.

Mr. D. A. Pavely flew a very old and energetic twin pusher, which was the first to put up good duration (55 seconds), although I am always inclined to think of minutes and not seconds in connection with these strange craft.

Mr. Saunders (T.M.A.C.) had a light high-wing monoplane, which showed by a flight of 46½ seconds, that it could do a good deal better on a decent day.

Ten extra points—or seconds—were added to each flight which had been started R.O.G. Mr. J. E. Pelly Fry was the only entrant to do so for every flight, and this gave him fourth place. This low-wing monoplane got off well, but twice it was caught in an evil gust against which it could not fight, and the first flight was also unlucky.

It is to be hoped that the weather will be a little more kind during our future competitions, notices of which will appear in this Journal in due course.

#### Gamage Cup Results

Entrant	Flights				
	1	2	3	Best	Position
A. T. Willis (T.M.A.C.) ..	64½	5	crashed	64½	1
D. A. Pavely ..	25½	55	5½	55	2
H. Saunders (T.M.A.C.) ..	15½	18½+10	46½	46½	3
J. E. Pelly Fry ..	23½+10	11½+10	13½+10	33½	4
J. Shill ..	26	5½	crashed	26	5

**The "Wakefield International Cup" Trials.**—The Trials for the most important Model Aeroplane Competition in the World will be held at Wimbledon Common on May 16. The Rules drawn up for these Trials appear below.

The British Team will be formed by the six best models in the Trials, in the opinion of the Council of the S.M.A.E. It is well to remember that we shall have to compete against the very best the Americans can build, and their duration usually goes in minutes, not seconds. Every prospective entrant can figure out what type is wanted. Secondly, the models will be flown by proxy, and it is important that they shall be as simple to rig and handle as possible. One may be able to manipulate a complicated gadget, but it is a lot to expect the same from someone who has never seen the thing before. And all members sending their models over for the Trials and, of course, every member of the team, should give clear directions concerning the handling of his machine.

#### Rules for the Wakefield International Cup Trials.

1. The trials will be flown on May 16, at Wimbledon Common, and, in the case of bad weather, will be postponed until May 23, as would be an ordinary competition.

2. Members of the S.M.A.E. and affiliated clubs wishing to enter trials, and who cannot attend personally, should

send their models to the Hon. Sec., S. G. Mullins, 72, Westminster Avenue, Thornton Heath, Surrey, carriage paid. These models will be flown by proxy. Members of provincial T.M.A.C. Squadrons are asked to send their models to their London Headquarters.

3. Competitors chosen from the trials for the team need not necessarily send the model flown in the trials to America to compete in the Cup if they can produce a better one before date of dispatch.

4. The S.M.A.E. members, or members of affiliated clubs, will fly models sent to be flown by proxy, but will not hold themselves responsible for any damage done by or to a model either in the trials or during transport.

5. Each model will be allowed six flights and the team will be chosen by the Council of the S.M.A.E., judged on duration and general performance.

6. The models chosen for the team will be sent to America by the S.M.A.E. A competitor sending a different model to that flown in the trials should notify the Competition Secretary of the S.M.A.E. at the conclusion of the trials.

JUSTE VAN HATTUM,

Competition Secretary, S.M.A.E.,

18, Stag Lane, Edgware, Middlesex.

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#### PUBLICATIONS RECEIVED

*Droit Aerien.* October, November, December, 1930. Per Orbem, 4, Rue Tronchet, Paris.

*An Hour of Aviation.* By Capt. N. Macmillan, M.C., A.F.C. London: Gerald Duckworth and Co., Ltd. Price 3s. 6d. net.

*Let's Help! A Collection of Good Causes.* By Sir Charles Bright, F.R.S.E., M.Inst.C.E. London: George Routledge and Sons, Ltd. Price 4s. 6d. net.

#### Catalogue

*Speed Indicators and Recorders.* Moul and Co., Ltd., 21, Old Queen Street, Westminster, London, S.W. 1.

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#### NEW COMPANY REGISTERED

UNIVERSAL CELLULOSE & PAINT SPRAYING CO. LTD., Jubilee Works, High Street, Harlesden, N.W. Capital £500 in £1 shares. Cellulose and paint spraying of wood and metal work, motor cars, aircraft, etc. Directors: S. Bell, 81b, Oxford Gardens, W.10; Mrs. A. B. M. Bell, 81b, Oxford Gardens, W.10.

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#### AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motors. The numbers in brackets are those under which the Specification will be printed and abridged, etc.)

##### APPLIED FOR IN 1929

Published April 9, 1931.

28,457. J. MARTIN and P. W. PITT. Arrangement and construction of aeroplane. (344,621.)

30,884. A. HOLMSTROM. Screw propeller. (344,871.)

##### APPLIED FOR IN 1930

Published April 9, 1931.

1,966. ECLIPSE AVIATION CORPN. Engine-starting apparatus. (345,007.)

1,969. ECLIPSE AVIATION CORPN. Engine-starting apparatus. (345,008.)

2,068. ECLIPSE AVIATION CORPN. Engine-starting apparatus. (345,011.)

2,739. ECLIPSE AVIATION CORPN. Engine-starting apparatus. (345,018.)

9,420. HELICE METALLIQUE BREVETS PAULHAN-PILLARD. Airscrews with automatically variable pitch. (345,098.)

11,211. A. L. MOND. (Elektronmetall. Ges.). Two-part disc-pattern landing wheel. (345,119.)

#### FLIGHT, The Aircraft Engineer and Airships.

36, GREAT QUEEN STREET, KINGSWAY, W.C.2.

Telephone (2 lines): Holborn, 3211.

Holborn, 1884.

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